ANÆSTHETIC APPARATUS.

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CLAUDIUS ASH, SONS & CO., Ltd.,

5 to 12, BROAD STREET, GOLDEN SQUARE,

LONDON, W.

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TELEPHONE NUMBER: 420 GERRARD (4 LINES).

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ASTRAL TRANSLUCENT CEMENT.

GREATLY IMPROVED.

(Dr. RAWITZER'S.)

A Delight to both Dentist and Patient.

ASTRAL TRANSLUCENT CEMENT is an ideal Silicate Filling Material quite distinct from filling materials of the oxyphosphate class. It has recently been greatly improved, and *is now being used with satisfaction by thousands of Dentists.*

A FEW TESTIMONIALS.

L. H.—"I am very pleased with the new Astral."

H. B.—"The new Astral is easy to use, and the results are most satisfactory."

M. H.—"I like the new Astral very much."

K. N.—"I can only speak in terms of the highest praise of the new Astral."

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FEATURES.—Astral is similar in appearance to the natural enamel, can hardly be detected in a tooth in the mouth if the right shade is used, does not shrink, is extremely strong, is not readily affected by the fluids of the mouth, wears well, and is greatly admired by both Operator and patient.

Supplied in the following Eight Shades :—

No. 1.	Whitish.	No. 4.	Pearl Grey.
„ 2.	Pale Yellow.	„ 4A.	Light Pearl Grey.
„ 2A.	Greenish Yellow.	„ 5.	Grey.
„ 3.	Yellow.	„ 6.	Brown.

		s.	d.
Small Packet, for trial, any Shade . .	per packet	4	0
One-Shade Packet, any Shade . . .	„	10	0
Four-Shade Packet—Powders 1, 2, 3, 4, and two bottles of Liquid . . .	„	15	0
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Send for our Booklet on Cements; it will please you.

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ANÆSTHETIC APPARATUS.

GENERAL DIRECTIONS FOR ORDERING.

In ordering Apparatus please state whether it is wanted for the administration of Nitrous Oxide Gas only, or of Nitrous Oxide and Oxygen in combination.

Should it be wanted in the United Kingdom or on the Continent for home use, two 100 or two 50-gallon gas cylinders fixed to a Twin-Stand are the best; if for patients at their own houses, one 100 or one 50-gallon cylinder fixed to a single attachment is most useful. For the administration of the mixture (N_2O and O) a triple gas-stand holding two 100 N_2O gas cylinders and one oxygen cylinder is most suitable.

Colonial customers will find 200 and 500-gallon gas cylinders, especially the cylinders with pedal attachment shown on page 11, very convenient for use at home; and some extra one-hundred size cylinders will serve for use when travelling.

It should also be stated of what colour the rubber gas bags required are to be—whether of black, red, silk, or check material. The twin gas bags employed for the mixture are made of silk, of rubber, and of a special strong black material.

Our stock, which consists of a large and well-assorted variety of the best Anæsthetic Apparatus, enables us to execute orders without the least delay.

In order to avoid disappointment we desire to state that we are unable to lend gas cylinders, but to save delay we usually forward **refills** immediately the empty cylinders come to hand. In every case, however, we recommend customers to wait for the refilling of their own cylinders; this can conveniently be done if one or two extra cylinders are owned, and always kept full. We are careful to see that every cylinder is perfect, and contains the full weight of gas before it leaves our possession—a practice which forms the most safe guarantee that we can offer to the Profession.

Before forwarding cylinders for recharging care should be taken to close the valves, in order to prevent interchange of contents with external atmosphere, owing to variations of temperature and barometric pressure; otherwise, in the event of the packing material decomposing through damp, the products may enter the cylinders and cause contamination.

CLAUDIUS ASH, SONS & CO., LIMITED.

GAS CYLINDERS.

(SPURGE'S.)

SPURGE'S Gas Cylinders are constructed of the best mild steel and made to specification, in accordance with the conditions laid down in the Government Blue Book of 1903, **On the precautions required to ensure their safety.**

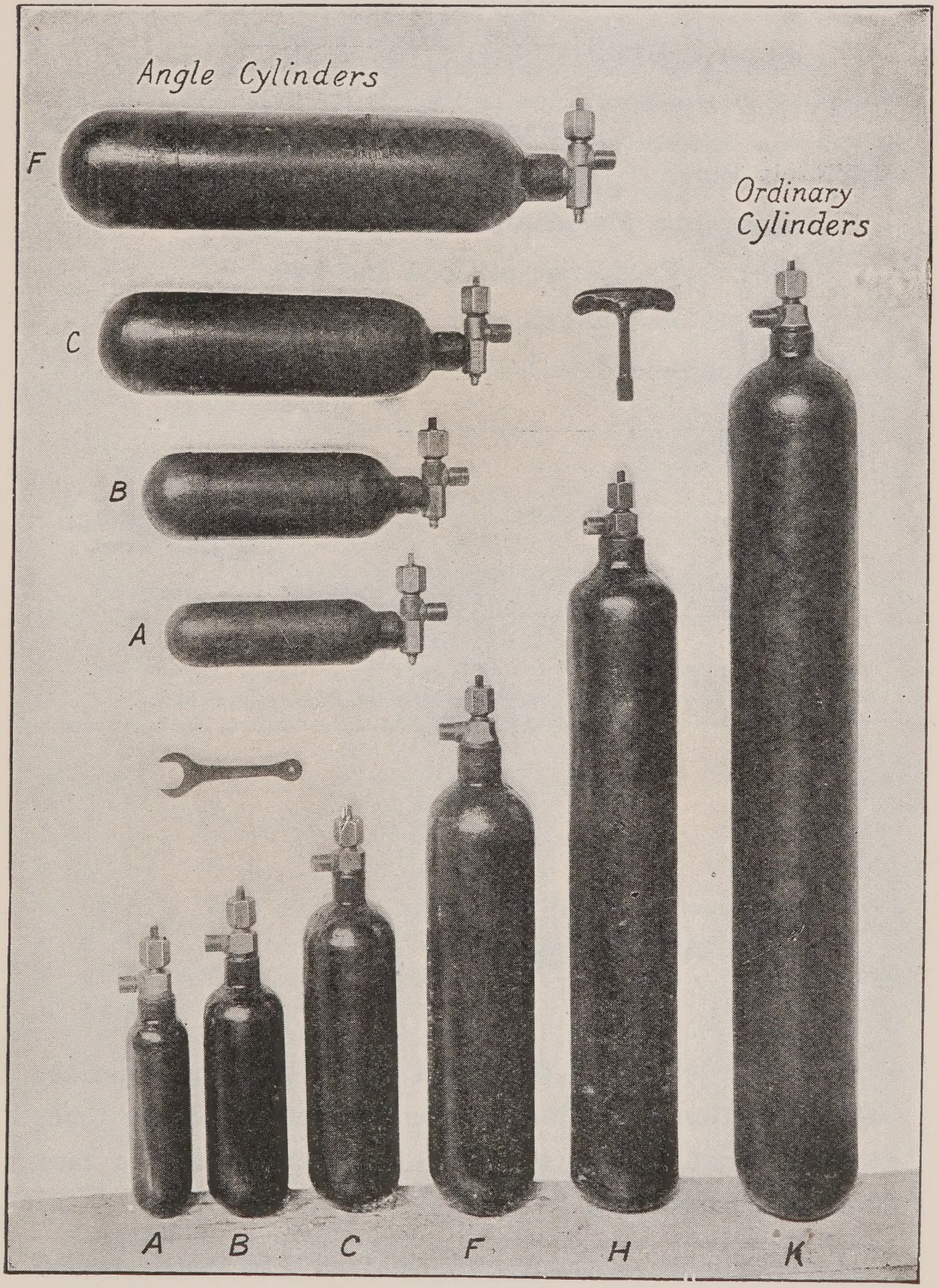
Size.	Capacity in Gallons.		Approximate Dimensions in inches.		Approximate Weight in lbs.
	N_2O.	Oxygen.	Length over all.	External Diameter.	
A—25-gallon	25	$7\frac{1}{2}$	$10\frac{3}{4}$	$2\frac{1}{4}$	$2\frac{3}{4}$
B—50 ,,	50	15	$12\frac{1}{4}$	3	$4\frac{3}{4}$
C—100 ,,	100	30	15	$3\frac{1}{2}$	7
F—200 ,,	200	60	20	4	13
H—300 ,,	300	90	27	4	18
K—500 ,,	500	150	35	$4\frac{1}{2}$	30

In conformity with the Blue Book, the Cylinders are annealed and tested hydraulically up to 3,360 lbs. per square inch, under Mr. Spurge's personal supervision.

They are also punch-marked with the number of the test and date, and this record is kept in his **Cylinder Register** for future reference.

The test, as will be seen, is a very severe one, and only those Cylinders which pass it are taken into use. For example, if, when the pressure is released from a Cylinder, it is found that the stress on the material has **not** exceeded its **elastic limit**—*i.e.*, that **there is no increase detected in its capacity,** resulting from the pressure applied—such a Cylinder is considered to be absolutely safe for every purpose for which it is intended.

For prices of Spurge's Cylinders, see pages 4 and 5.


Angle Cylinders
F
C
B
A
Ordinary Cylinders
A
B
C
F
H
K

SPURGE'S
NITROUS OXIDE GAS.

Guaranteed to be—

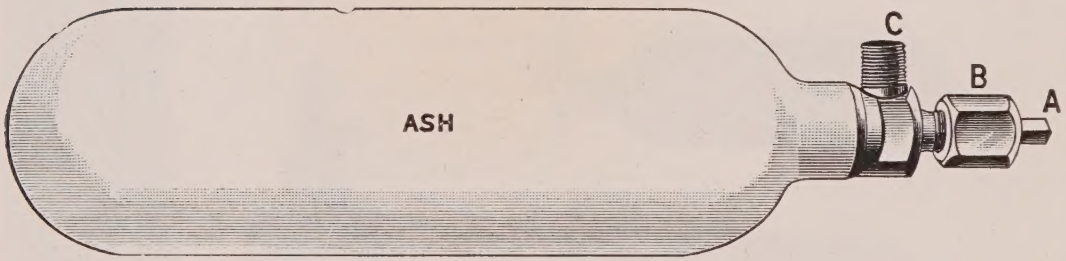
Absolutely Pure,

Free from Malodorous Taint,

Productive of Good and Safe

Anæsthesia, and

Unattended by Unpleasant After-Effects.



A—Tap of Gas Cylinder.
B—Gland Nut for protecting the lower part of the Tap on the Cylinder.
C—Male Screw on Cylinder to which the union of the Cattlin's Bag is attached.

	Cylinder. £	s.	d.	Gas. s.	d.	Complete. £	s.	d.
25-gallon size	1	0	0	1	6	1	1	6
50 „	1	3	0	2	9	1	5	9
100 „	1	4	6	5	6	1	10	0
200 „	1	15	0	11	0	2	6	0
300 „	1	17	6	15	0	2	12	6
500 „	2	10	0	25	0	3	15	0

Cylinders refilled at the prices here noted for the Gas. When the Gas in Cylinders that are refilled at one time, amounts to 300 gallons or more, it is charged at the rate of 5s. per 100 gallons.

Each Cylinder is thoroughly cleansed and tested before it is refilled.

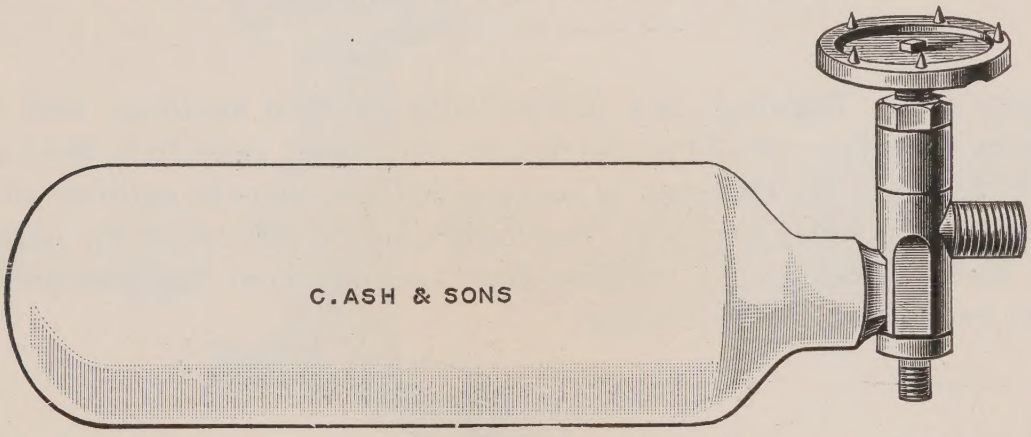
NITROUS OXIDE GAS—*continued.*

SPURGE'S ANGLE GAS CYLINDERS.

MADE OF STEEL, AND MOST CAREFULLY ANNEALED.

Spurge's Angle Cylinders for Nitrous Oxide Gas, or for Oxygen, are recommended with the fullest confidence.

They are favoured by the most eminent Anæsthetists, who claim that this form of Cylinder renders the Gas less liable to freeze in the valve, and thus hamper the administration of the anæsthetic, than other kinds of Gas Cylinders.



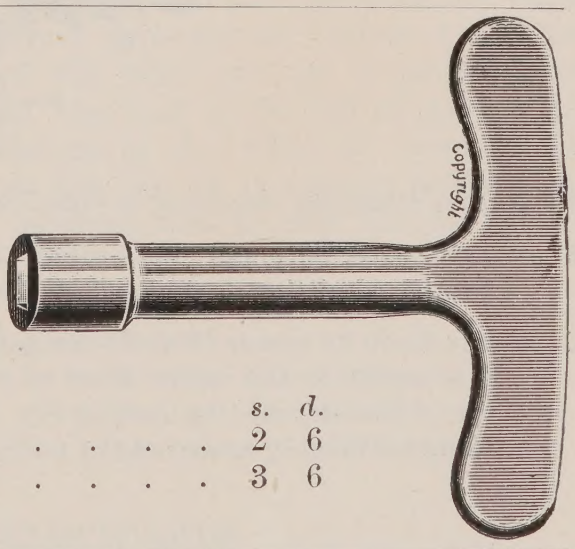
	Cylinder. £ *s.* *d.*	Gas. *s.* *d.*	Complete. £ *s.* *d.*
25-gallon size . . .	1 3 0	1 6	1 4 6
50 „ . . .	1 5 0	2 9	1 7 9
100 „ . . .	1 7 6	5 6	1 13 0
200 „ . . .	1 17 6	11 0	2 8 6

Cylinders refilled at the prices here noted for the Gas.

SPURGE'S KEY

FOR

GAS CYLINDERS.



	s. *d.*
Plain Steel, japanned	2 6
The same, Nickel-plated	3 6

OXYGEN GAS

FOR USE IN CONJUNCTION WITH NITROUS OXIDE.

A 100-gallon size Nitrous Oxide Cylinder holds about 30 gallons of Oxygen. Cylinders are refilled at 2*s.* 6*d.* each.

	Cylinder. £ *s.* *d.*	Oxygen. *s.* *d.*	Complete. £ *s.* *d.*
PRICES	1 4 6	2 6	1 7 0

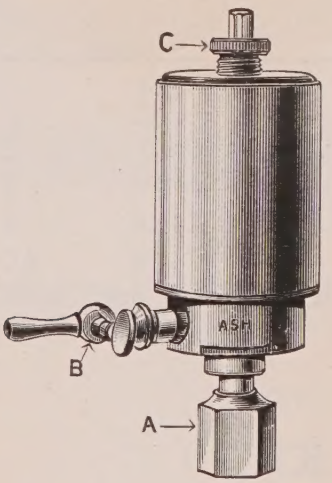
GAS REGULATOR.

(WELLER'S.)

(PATENTED.)

FOR CONTROLLING THE FLOW OF COMPRESSED GASES FROM STEEL AND IRON CYLINDERS.

WELLER'S Gas Regulator is a distinct advance upon anything that has yet been made for controlling the flow of compressed gases from Steel and Iron Cylinders. No **Quieter** is required with it, there is nothing about it to get out of order, and it so completely silences the gas in its passage from the Cylinder to the Cattlin's Bag that the most nervous patient cannot be alarmed.



A—Nut for attaching Regulator to Gas Cylinder or Stand.

B—Nozzle on which small India-rubber Tubing of Cattlin's Bag is slipped, with Tap for admitting or shutting off the gas.

C—Screw Knob by means of which the gas supply is regulated when the Regulator is attached to the outlet screw of a Gas Cylinder or Stand. The flow from the Cylinder can be completely controlled to suit the needs of the Administrator by means of the milled screw knob **C**.

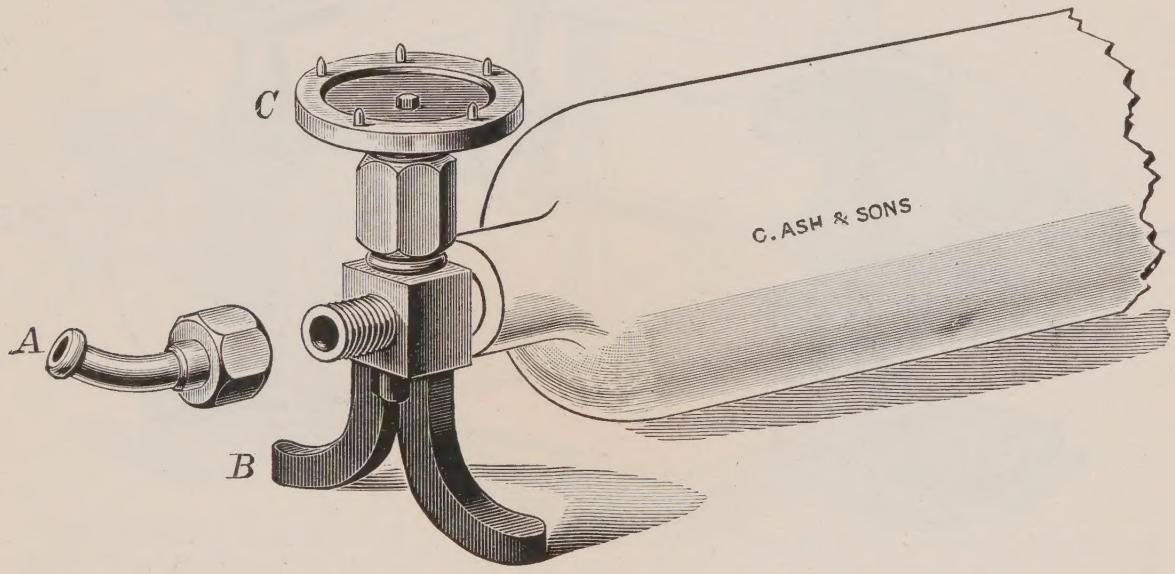
DIRECTIONS FOR USE:

To obtain a slow flow unscrew knob **C** to its full height and then turn it downwards one thread. From this point the flow can be increased to any extent, within the range of the Regulator, by a further screwing-down action.

	£	*s.*	*d.*
Regulator as illustrated	1	15	0

ASH'S COMBINED GAS CYLINDER AND PEDAL ATTACHMENT.

(REGISTERED. REG. No. 289,847.)



Those Dentists who employ Nitrous Oxide Gas have probably felt the need of such a combination as is here shown, viz., a gas cylinder and stand joined together so as to form a complete apparatus ready for immediate use without the addition of any other part or parts.

The Stand ***B*** with Valve is cast in one piece and permanently fitted to the Gas Cylinder. The only separate parts are the Union ***A*** and the Circular Foot Key ***C***. By means of the latter the tap is easily opened and closed with a gentle movement of the foot to the left or right. All that the administrator therefore requires to do when he receives the apparatus is to put the Foot Key on the tap as it appears in the illustration, to screw the Union ***A*** in position, and to slip the end of the India-rubber tubing over the nozzle.

The advantages claimed for the Apparatus are:

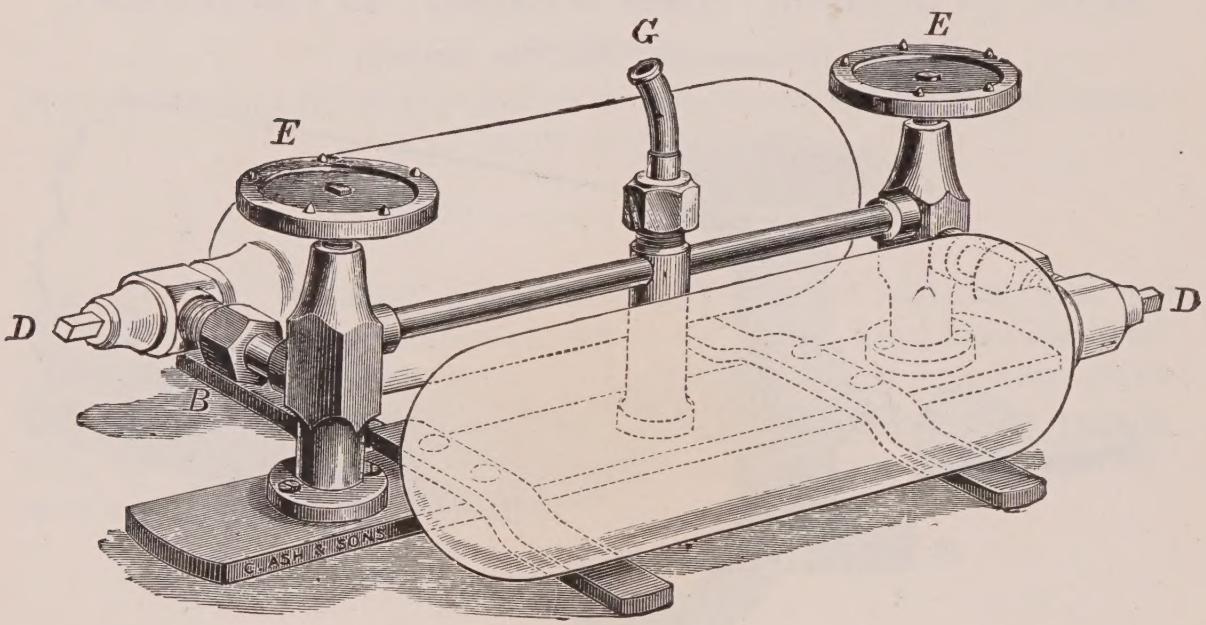
1. Simplicity of construction.
2. Comparative cheapness.
3. Readiness for instant use.
4. Freedom from leakage.
5. Saving of trouble and time.
6. Absence of wear of the parts.

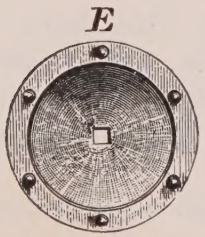
Apparatus as illustrated minus Union ***A***, in four sizes, viz., with

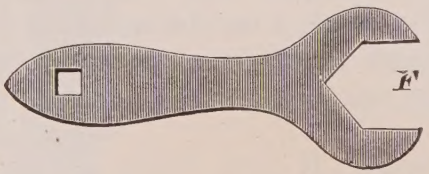
	£	*s.*	
Cylinder containing 100 gallons of gas	1	17	6
„ „ 200 „ „	2	13	6
„ „ 500 „ „	4	0	0
„ „ about 30 gallons Oxygen	1	14	6
Union ***A*** . . . . . extra	0	3	6

TWIN GAS CYLINDER STAND.

(WELLER'S.)







DESCRIPTION:

B—Union connecting Gas Cylinder with Stand.
D—Taps of Gas Cylinders.
E—Circular Foot Keys.
F—Spanner for tightening Union ***B***.
G—Union to which tubing of Cattlin's Bag is attached.

DIRECTIONS FOR USE:

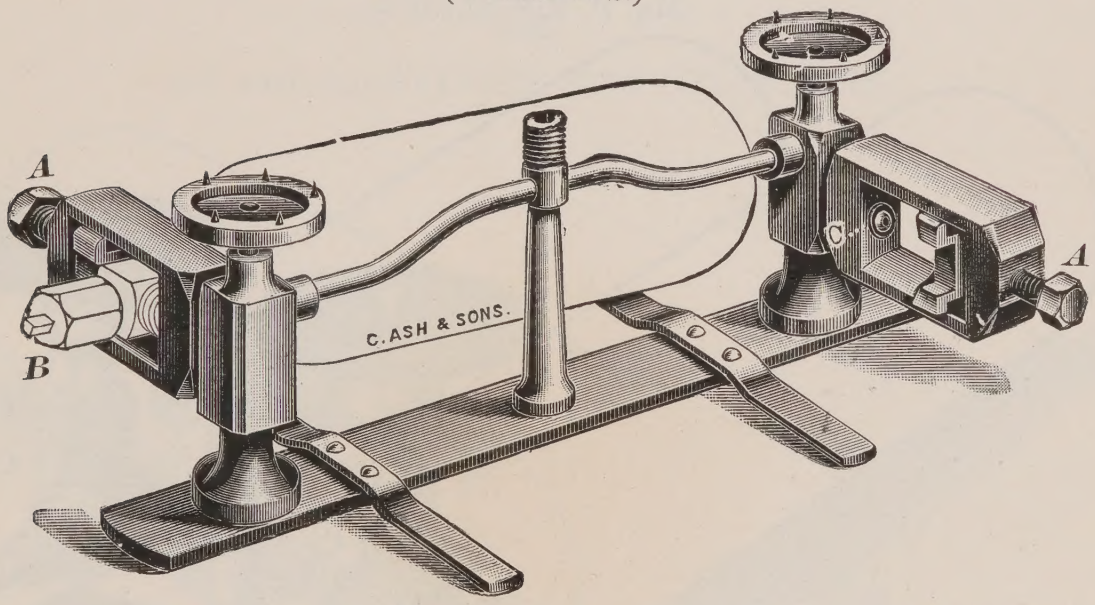
Fix the two Cylinders—fifty-gallon or one-hundred-gallon size, steel or iron—by means of the Unions ***B***. Attach the union of the Cattlin's Bag to the Stand, as shown under ***G***. Open the Taps ***D*** of the Cylinders.

The apparatus is now ready for use. A slight unscrewing movement with the foot on either Foot Key ***E*** releases the gas, which will freely enter the Cattlin's Bag, and a gentle screwing-up motion with the foot turns off the gas. Scarcely any force is required to work the Foot Keys.

	£	*s.*	*d.*
Stand, with two Foot Keys ***E***, and Spanner ***F***, but minus Union ***G***	1	10	0
The same, Nickel-plated	1	16	0
The same, with Pillar, on which there are two Spirals for holding Facepiece, etc.	2	2	0
Ditto ditto Nickel-plated throughout	2	18	0
Union ***G*** extra	0	3	6
Spanner „	0	2	6

TWIN GAS CYLINDER STAND.

(WELLER'S.)



By means of the nuts ***A A*** on the Detachable Clamps of this Stand the outlet of the Gas Cylinder is pressed over the inlet nipple ***C*** of the Stand, and it is only then necessary to open Tap ***B*** of the Cylinder; there is no trouble with worn screws on cylinders, or screws that vary in size, for the simple reason that they have not to be used for securing the Cylinders to the Stand.

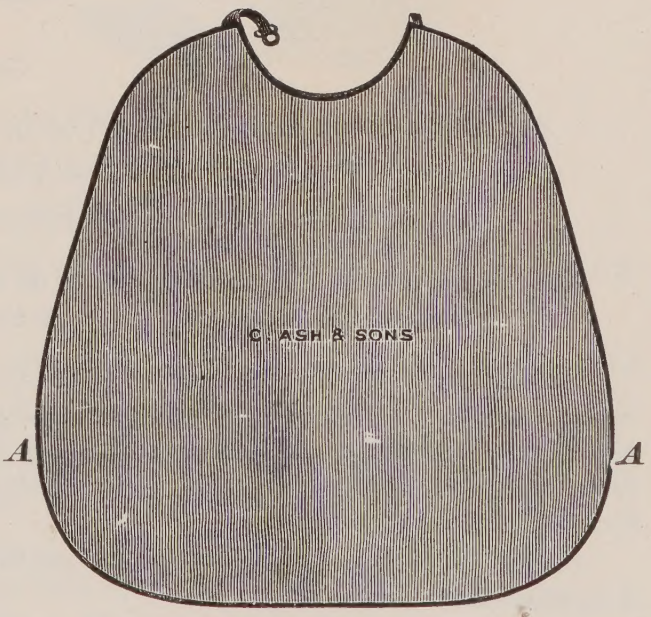
	£	*s.*	*d.*
Stand for two 100-gallon size Cylinders and Spanner	2	10	0
" " 50 " " "	2	10	0
Either of the above with Pillar and Spirals and Spanner . . .	3	4	0

WATERPROOF APRON.

FOR USE IN THE OPERATING ROOM.

The Apron here illustrated will be found most valuable for protecting the patient's dress during dental operations, for which purpose it has been specially designed. It is durable, light, neat in appearance, and can be as readily washed as a serviette.

	s.	*d.*
PRICE	3	6

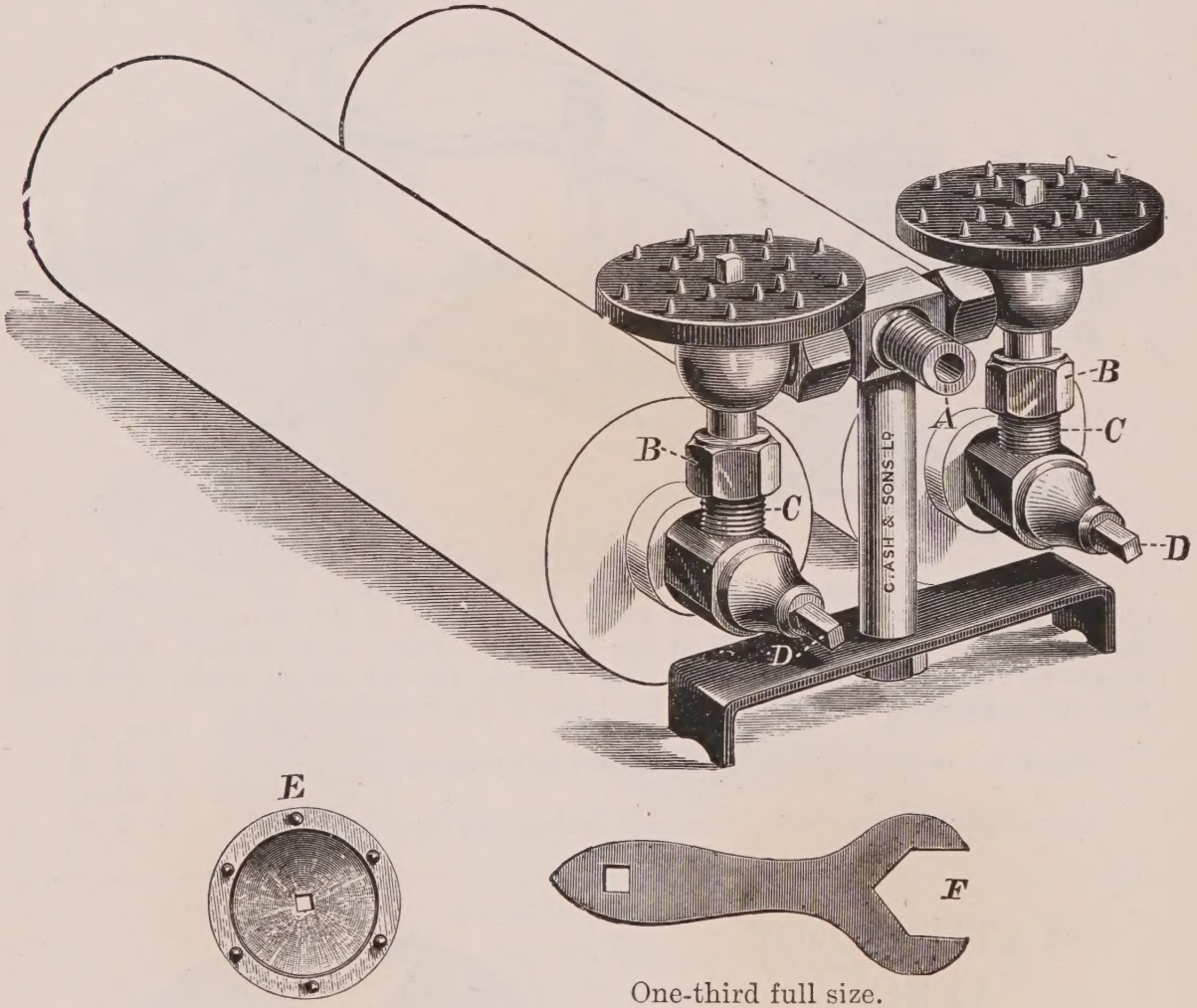


Length, 34 inches; width at ***A A***, 34 inches.

For other Aprons, see page 12.

PORTABLE PEDAL ATTACHMENT.

(Mr. P. EDGELOW'S.)



One-third full size.

A—Male Screw to which the Union of the Cattlin's Bag is fixed.
B—Unions for attaching to Gas Cylinders.
C—Male Screws on Gas Cylinders.
D—Taps of Gas Cylinders.
E—Shows one of the Foot Keys as now supplied.
F—Spanner for attaching Unions to Gas Cylinders.

In shutting off the gas with this Pedal Attachment no force whatever is necessary. The valve plug is so finely turned that an easy movement closes it effectually. In this respect the Pedal Attachment differs entirely from the taps of gas cylinders, which sometimes require considerable force to open and close.

Being portable, it is specially suitable for carrying about in the Anæsthetist's Hand-Bag.

	£	s.	d.
Price complete, with Spanner and two Circular Foot Keys	1	10	0

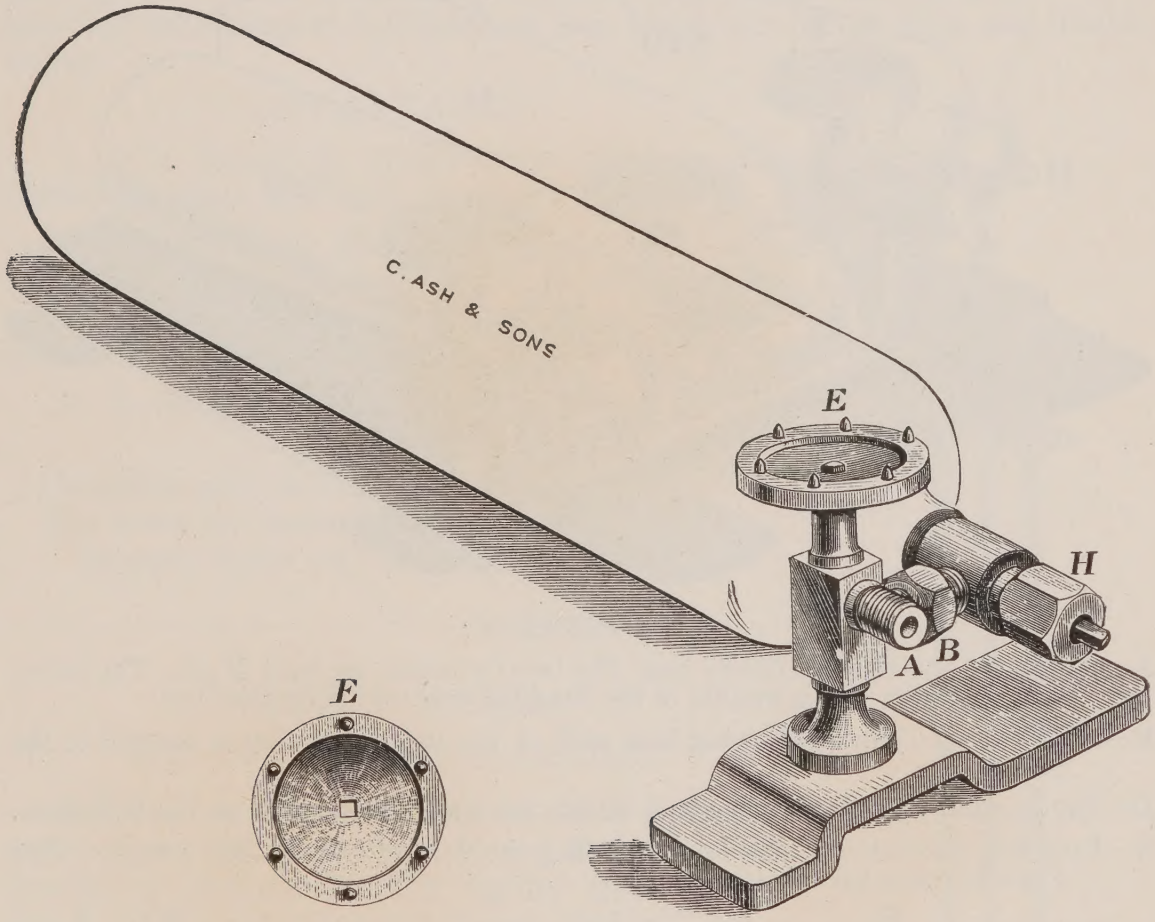
N.B.—This is now made with an improved brass foot, instead of iron.

PEDAL ATTACHMENT.

(CLARKSON'S.)

FOR

100 AND 200-GALLON SIZE CYLINDERS.



DESCRIPTION:

A—Male Screw to which the Union of the Cattlin's Bag is attached.

B—Union connecting Pedal Attachment to Gas Cylinder.

E—Foot Key for opening the Tap of the Gas Cylinder and releasing the Gas.

H—Gland Nut for protecting the lower part of the Tap on the Gas Cylinder.

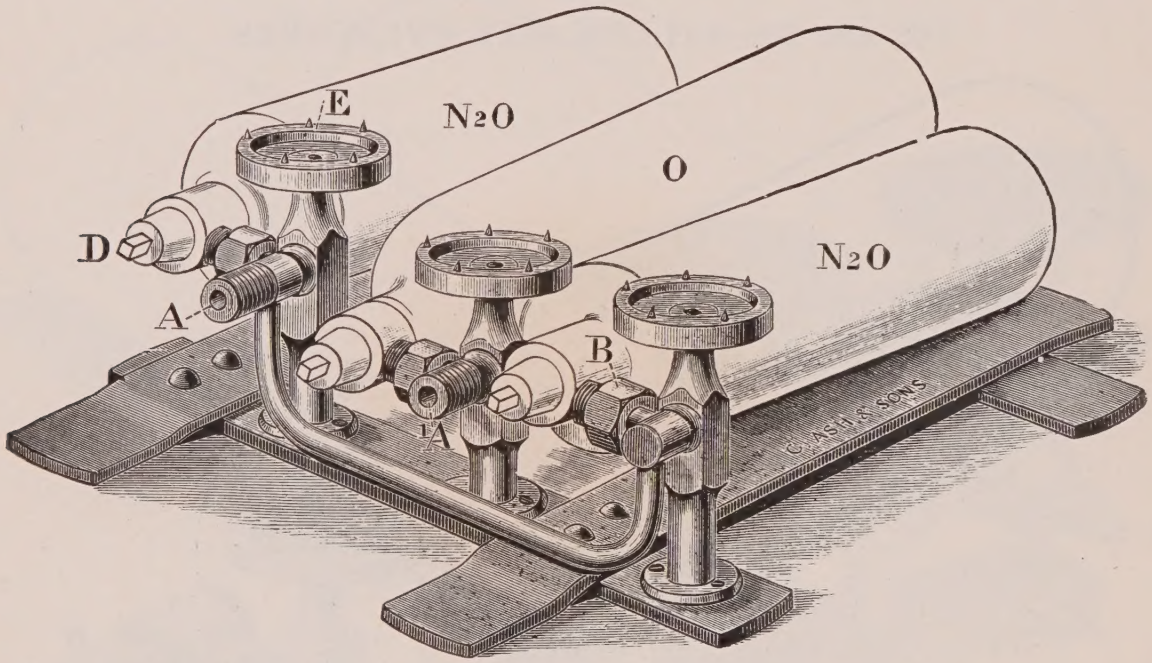
It is the simplest Pedal Attachment that has yet been introduced for 100 and 200-Gallon size Cylinders.

	£	*s.*	*d.*
PRICE, including Foot Key and Spanner . . .	1	1	0
Pedal Attachment with Foot Key and Spanner for 50-gallon size Cylinder, same pattern as illustrated but of lighter make	1	1	0

TRIPLE GAS CYLINDER STAND.

(WELLER'S.)

FOR TWO NITROUS OXIDE AND ONE OXYGEN CYLINDERS.



DESCRIPTION:

A—Outlet for the Nitrous Oxide from the two Cylinders marked N_2O. The corresponding part in the middle of the Stand shows the Oxygen outlet.

B—Male Tap on Cylinder showing how each of the three Cylinders is secured to the Stand.

D—Tap on each Cylinder by means of which the Gas is released from the Cylinders.

E—Foot Key on each Cylinder for admitting the Gas into the Cattlin's Bags. This Foot Key also fits the tap D.

	£	*s.*	*d.*
Stand with three Foot Keys, but without the Gas Cylinders . .	2	10	0
The same with Pillar and Spirals	3	3	0

RUBBER APRONS.

	s.	*d.*
Large Rubber Apron, as used at the Royal Dental Hospital of London to prevent the garments of patients being soiled during the administration of anæsthetics. The Apron is about 5 feet long by 43 inches wide, and is provided with weighted flaps which hang over the shoulders to keep it in position; colour, black outside, light check inside	12	0
Rubber Apron similar to the above, Mr. Apperley's pattern, with pocket	12	0
Rubber Apron, 34 inches long by 33 inches wide, in red, black, or white rubber	9	0
Washable Rubber Apron, brown holland colour, 32 inches long by 33 inches wide	3	9

See also page 9.

VERTICAL TWIN GAS CYLINDER STAND.

(SPURGE'S.)

(REGISTERED. Reg. No. 442,724.)

Those Anæsthetists who prefer a vertical to a horizontal stand will find Spurge's, here illustrated, extremely convenient and portable. It is provided with support for Cattlin's bag, hand regulating keys, and double union.

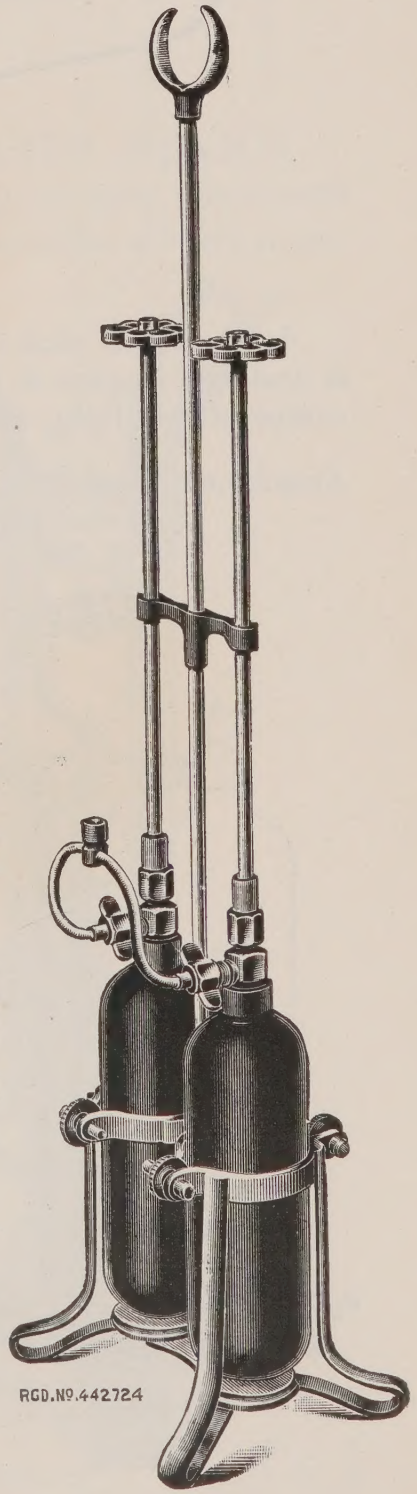
ADVANTAGES:

1. It is strong in construction, rigid in use, durable in wear, and light in weight.

2. The efficient clamping arrangement with which it is provided permits of cylinders being quickly mounted and unmounted, with the least possible exertion.

3. It occupies very little floor space.

	£	*s.*	*d.*
Complete without Gas Cylinders .	2	18	0
The same for three Cylinders—two Nitrous Oxide and one Oxygen .	4	0	0



HEMP BAGS.

FOR HOLDING GAS CYLINDERS.

For the conveyance of Nitrous Oxide Cylinders and Oxygen Cylinders these Hemp Bags are very convenient and considerably lighter than wooden boxes. They are extremely strong, and will last a long time in use. Both full and empty Cylinders will carry safely in them.

In forwarding Cylinders to us, a tie-on label, bearing the sender's name and address as well as our own, should be fastened round the neck of each Bag, and, in addition, we should be advised by post of their dispatch, so that we may know to whom each Cylinder belongs in case the tie-on label gets torn off the Bag in which it is packed.

The Bags are supplied in two sizes, as under:—

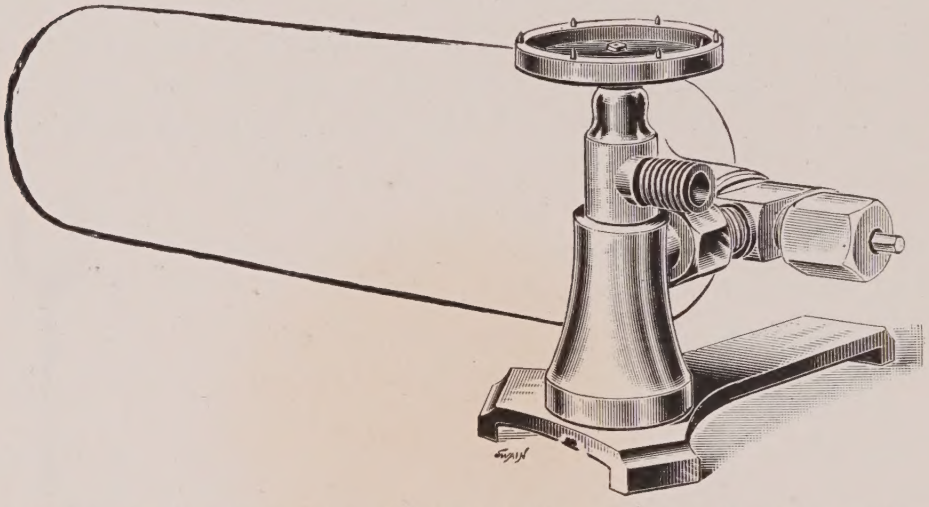
		s.	*d.*
Small, 14 × 3½ inches, for 50-gallon size Cylinders . .	each	3	6
Large, 18 × 4 inches, for 100-gallon size Cylinders. .	„	4	0

For Wooden Cases, see page 57.

PEDAL ATTACHMENT.

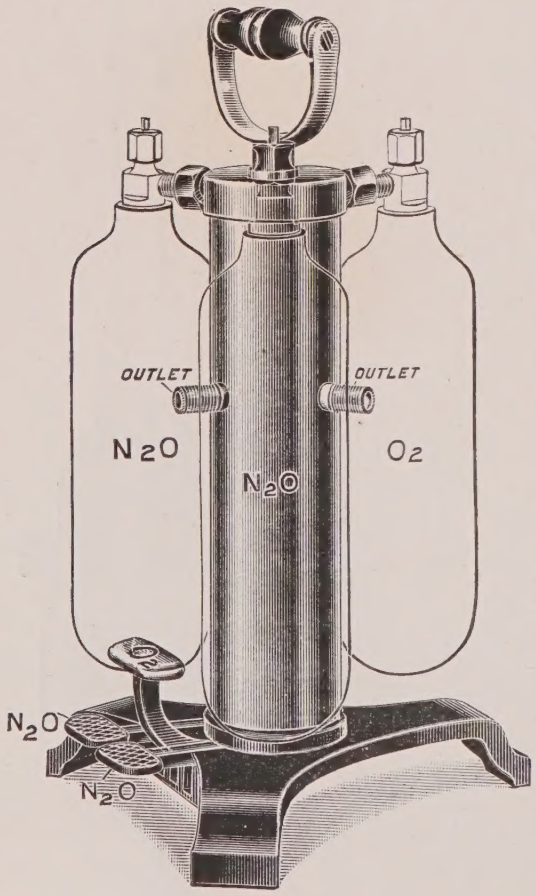
(SPURGE'S.)

(REGISTERED. REG. No. 319,712.)



It is claimed that this Attachment is the strongest yet introduced. It is neat and elegant in appearance, more rigid in position than any other, comparatively light, and most durable.

	£	*s.*	*d.*
Attachment Lacquered, with Foot Key and Spanner	1	1	0
„ Nickel-plated, with Foot Key and Spanner. . . .	1	5	0



TRIPLE GAS CYLINDER STAND.

(SPURGE'S.)

This Stand is arranged for two one-hundred-gallon size Nitrous Oxide Gas Cylinders and one thirty-gallon size Oxygen Cylinder, and is fitted with separate pedal valves, each of which gives independent control.

DIRECTIONS:

To prepare for use, couple the Cylinders to the unions on the Stand and permanently open the several valves. In coupling-up care should be taken to make the connections so secure that no escape of gas can be detected.

To obtain a supply of Nitrous Oxide, press downwards to its fullest extent the N_2O pedal of the Cylinder in use; this will arrest the flow. Then slightly release until the required amount is obtained. When the foot is removed the flow automatically ceases.

To obtain a supply of Oxygen, press slightly downwards the O_2 pedal.

TRIPLE GAS CYLINDER STAND

(SPURGE'S)—*continued.*

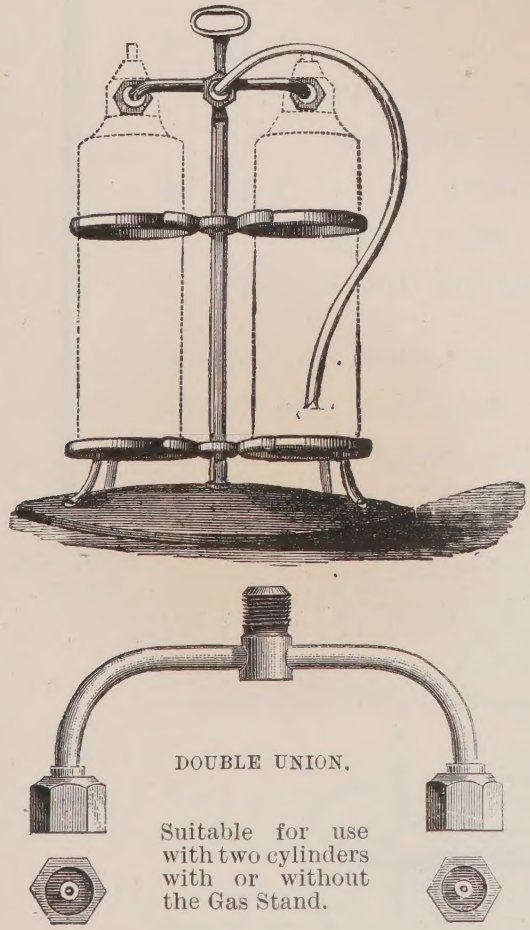
The coupling for the Oxygen Cylinder is at the back of the Stand, and its outlet is on the right-hand side.

The couplings for the Nitrous Oxide Cylinders are towards the front of the Stand, and the outlet, which is common to both Cylinders, is above the pedals.

	£	*s.*	*d.*
PRICE of Stand japanned, bright parts nickel-plated, with Spanner	4	10	0
The same with Pillar and Spirals	5	2	6

NAPIER'S STAND.

FOR TWO 50 OR TWO 100-GALLON SIZE CYLINDERS.



DOUBLE UNION.

Suitable for use with two cylinders with or without the Gas Stand.

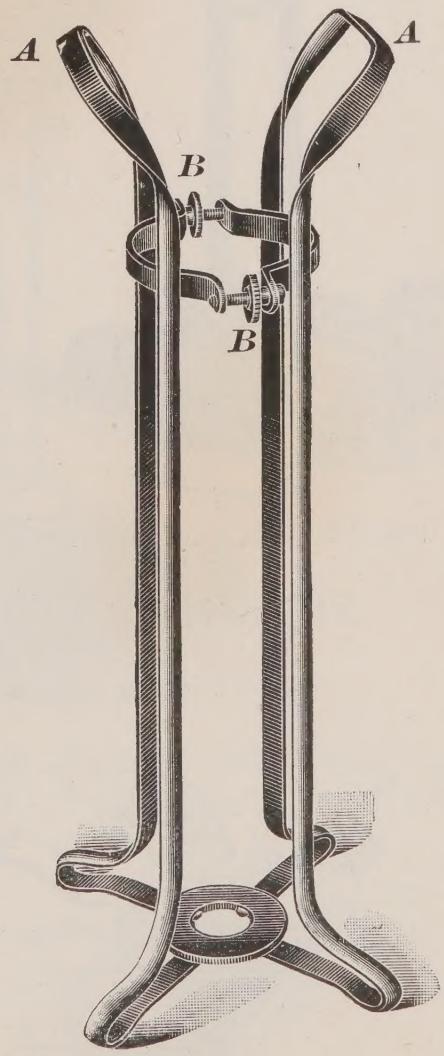
	£	*s.*	*d.*
Stand with Double Union ..	1	10	0
The same with Pillar and Spiral	2	0	0
Double Union	0	8	6
Long Gas Key	0	5	6

In ordering, state whether the Stand and Union are required for 50 or 100-gallon size Cylinders.

SPURGE'S STAND.

FOR 500-GALLON SIZE CYLINDER

Simple in construction and very strong.



A A—Handles for lifting Stand.

B B—Clamping Screws for securing Cylinder in Stand.

	£	*s.*	*d.*
PRICE, as illustrated	1	10	0

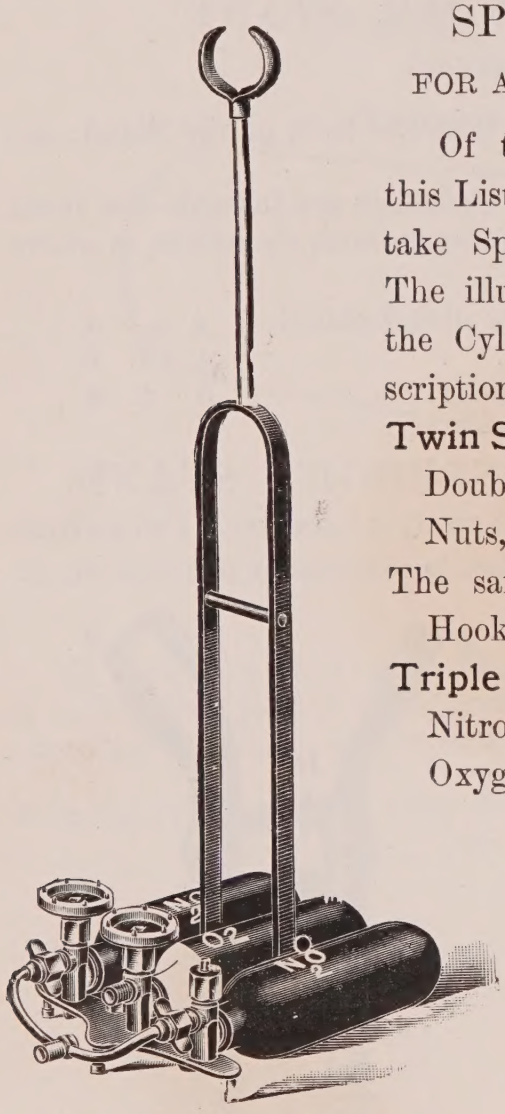
SPURGE'S STANDS

FOR ANGLE CYLINDERS—See p. 5.

Of the various Stands shown in this List this is the only one that will take Spurge's Angle Gas Cylinders. The illustration so clearly shows how the Cylinders are arranged that description is unnecessary.

	£	*s.*	*d.*
Twin Stand complete with Double Union, two Fly Nuts, and Circular Key .	1	5	0
The same with Pillar and Hooks	1	17	6
Triple Stand for two Nitrous Oxide and one Oxygen Cylinders . .	1	17	6
The same with Pillar and Hooks	2	15	0

In ordering the above, please state what size Cylinders the Stand is required for.



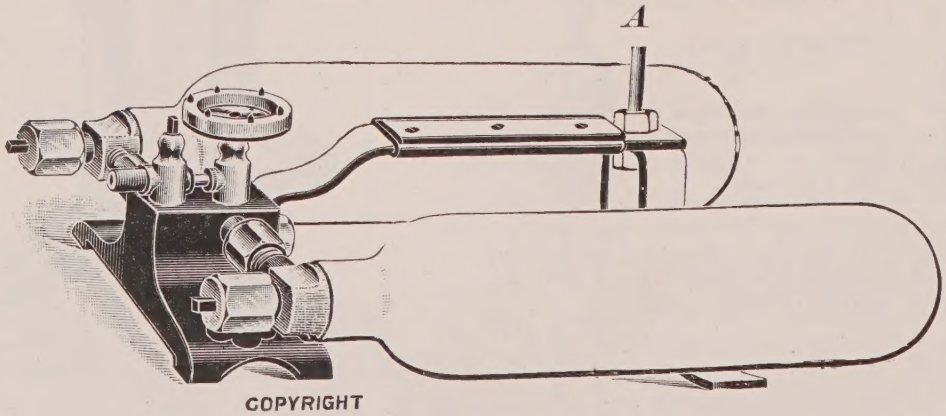
Stand for Angle Cylinders.

Pillar and Hooks.

SPURGE'S TWIN CYLINDER STAND.

(WAR OFFICE PATTERN.)

A good strong, reliable Stand, built to stand rough usage.



COPYRIGHT

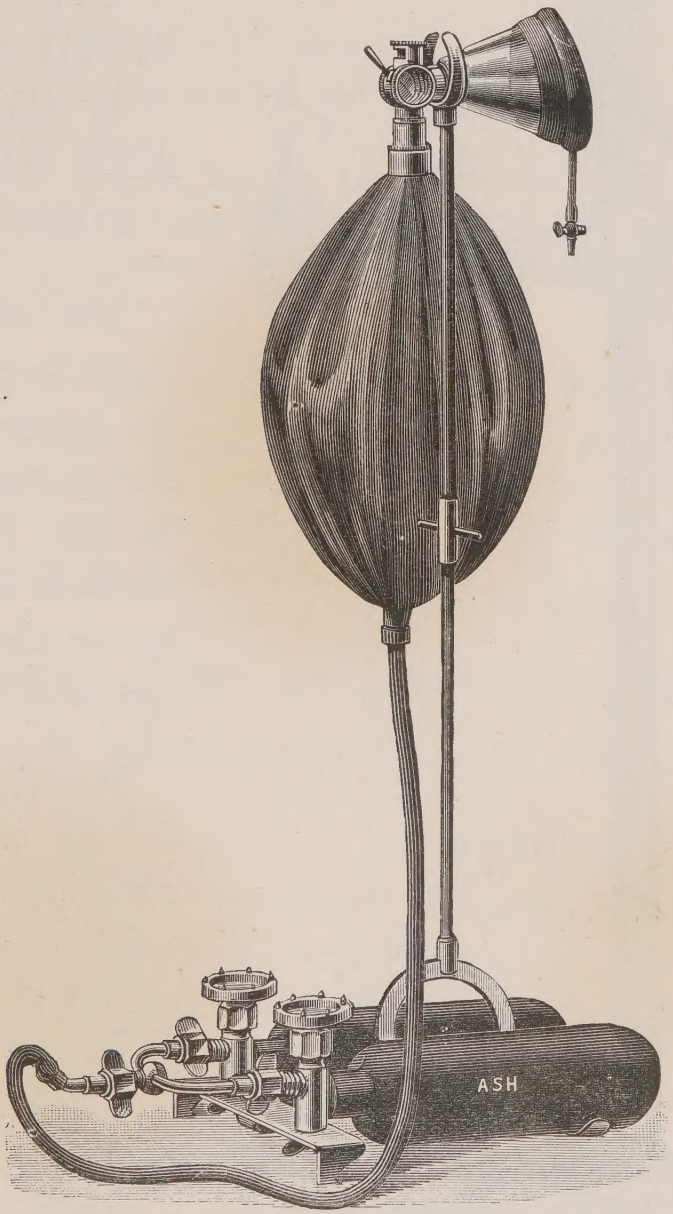
Stand for ordinary Cylinders.

	£	*s.*	*d.*
With one circular Foot Key and Spanner	2	0	0
The same with Pillar and Hooks shown above	2	10	0

*This Pillar fits on stem at **A** in illustration of Stand.*

TWIN STAND FOR ANGLE GAS CYLINDERS.

(SPURGE'S.)

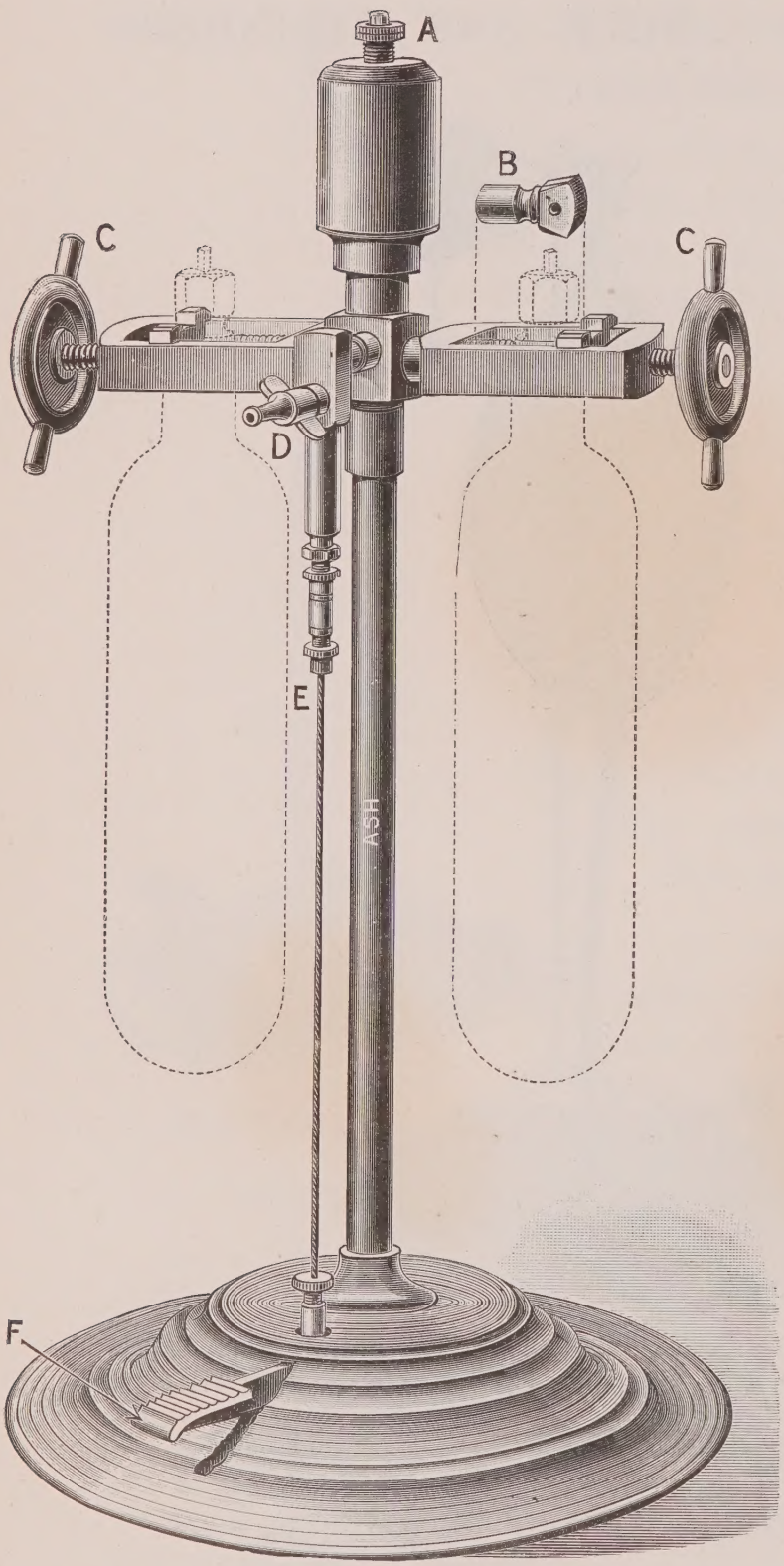


The illustration shows the Stand with Two 100-gallon size Angle Cylinders, Foot Keys, Upright Rod, Cattlin's Bag, Facepiece with Weller's Stopcock and India-rubber Tubing.

	£	*s.*	*d.*
PRICE of Stand and Foot Keys	1	17	6
„ of Apparatus complete, as illustrated . . .	8	5	0

INDIA-RUBBER TUBING.

		s.	*d.*
Small red, very thick, best quality . . .	per foot	1	0
Covered with worsted, wired inside . .	„	1	10
„ „ smooth „	„	2	9



Total height, 24 inches. Width at **C C**, 12 inches.

A—Weller's Gas Regulator.
B—Plug to take the place of Cylinder when it is removed and there is only one Cylinder left in the Stand.
C C—Screw Clamps for securing Cylinders in position.
D—Outlet Nipple.
F—Foot Lever.

GAS STAND WITH WELLER'S REGULATOR AND AUTOMATIC FOOT LEVER.

The gentlest pressure on the Foot Lever **F** gives the Anæsthetist complete control over the outflow of the gas; in this respect the Stand is the most convenient that has ever been introduced.

Weller's Gas Regulator **A** is a distinct advance upon anything that has yet been made for controlling the flow of compressed gases from Steel or Iron Cylinders. No **Quieter** is required with it, there is nothing about it to get out of order, and it so completely silences the gas in its passage from the Cylinder to the Cattlin's Bag that the most nervous patient cannot be alarmed.

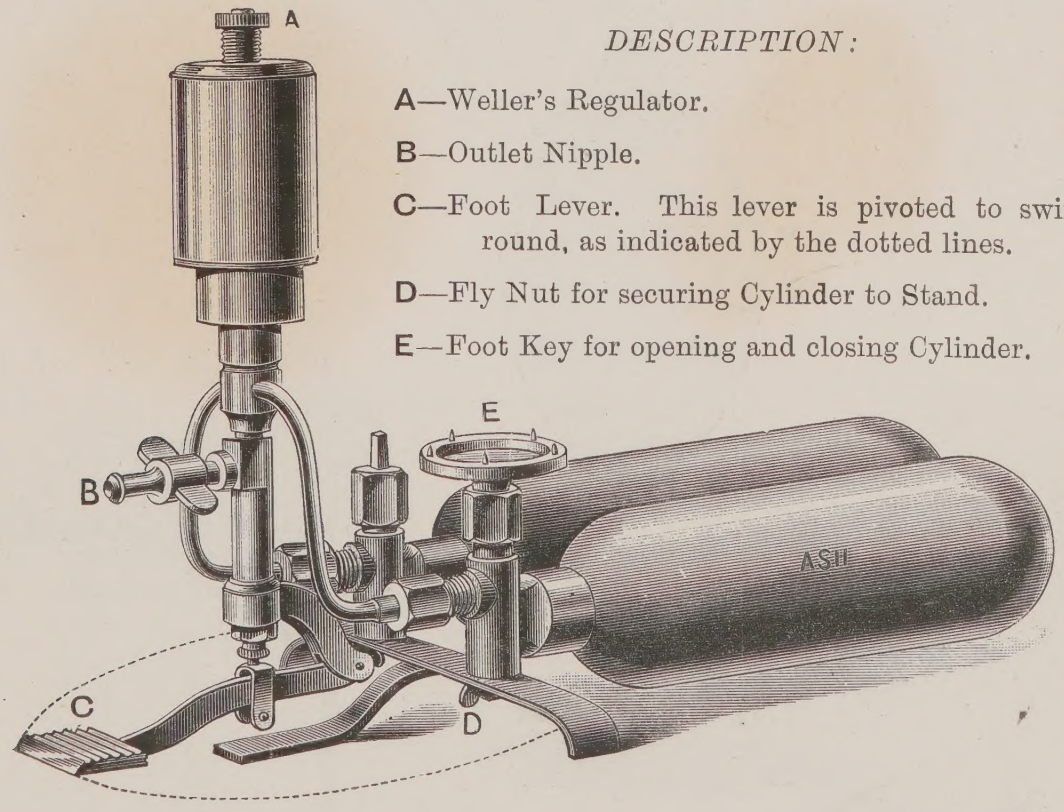
GAS STAND WITH WELLER'S REGULATOR, ETC.—*continued.*

	£	*s.*	*d.*
Stand, as illustrated, minus Cylinders	4	12	6
The same with brass upright and hooks for supporting Facepiece, etc.	5	4	0
Stand, as illustrated, but for two Cylinders Nitrous Oxide Gas and one Cylinder Oxygen	6	0	0
The same with brass upright and hooks for supporting Facepiece, etc.	6	12	6

DIRECTIONS FOR USING WELLER'S GAS REGULATOR:

To obtain a slow flow of gas, unscrew Knob **A** on Regulator to its full height, and then turn it downwards one thread. From this point the flow can be increased to any extent, within the range of the Regulator, by a further screwing-down action.

GAS STAND FOR ANGLE CYLINDERS, WITH WELLER'S REGULATOR AND FOOT LEVER.



DESCRIPTION:

A—Weller's Regulator.

B—Outlet Nipple.

C—Foot Lever. This lever is pivoted to swing round, as indicated by the dotted lines.

D—Fly Nut for securing Cylinder to Stand.

E—Foot Key for opening and closing Cylinder.

	£	*s.*	*d.*
Stand, as illustrated, minus Cylinders	4	0	0
		0	2

FACEPIECES, ETC.

FIG. 2.

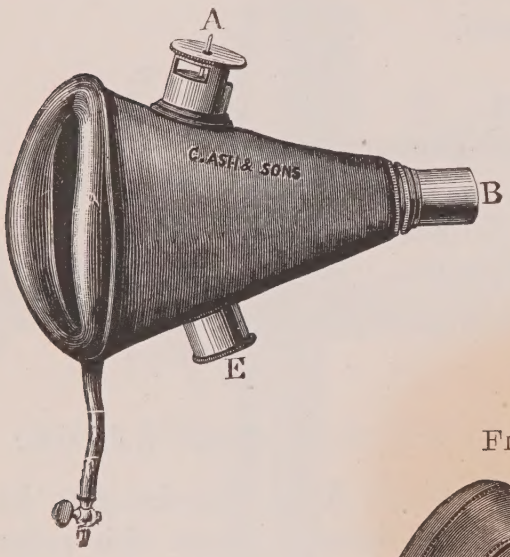


FIG. 3.

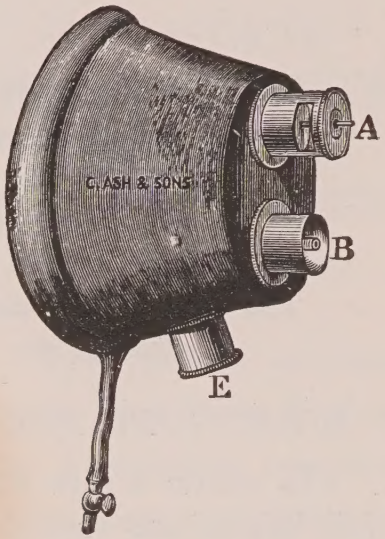


FIG. 1

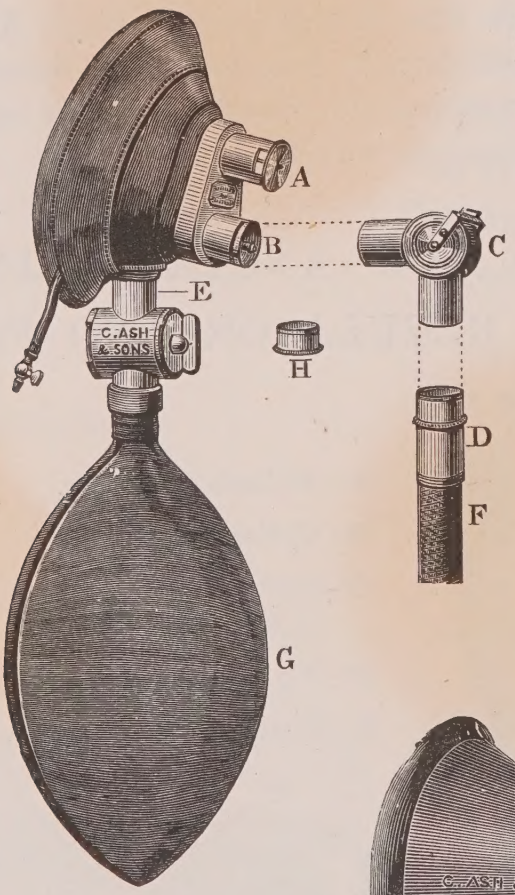
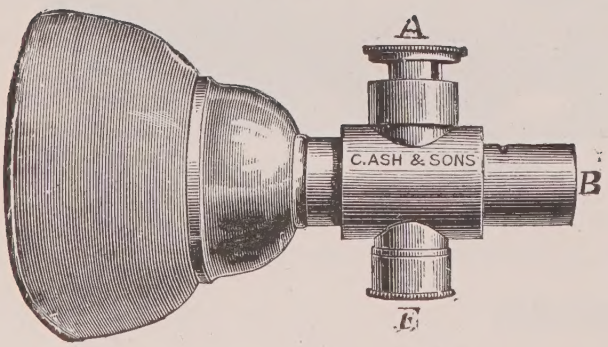


FIG. 5.

FIG. 4



FACEPIECES, ETC.—*continued.*

DESCRIPTION:

A—Expiratory Valve.
B—Inspiratory Valve.
C—Two-way Stopcock for connecting Facepiece with Gas-Bag, or Gasometer.
D—Mount attached to Worsted-covered Tubing.
E—Mount for holding either an Ether or a Supplemental Bag.
F—Worsted-covered Tubing leading to Gas-Bag, or to Gasometer.
G—Ether Bag or Supplemental Bag.
H—Cap to cover Mount when the Ether or Supplemental Bag is not used.

FACEPIECES.

		s.	d.
Fig. 1.	(Clover's) with Mount E, large, medium, or small each	20	0
„ 1.	„ without „ „ „ „ „	17	6
„ 2.	Funnel-shaped, with „ „ „ „ „	20	0
„ 2.	„ without „ „ „ „ „	17	6
„ 3.	Flexible, with „ „ „ „ „	20	0
„ 3.	„ without „ „ „ „ „	17	6
„ 4.	American pattern, with Dr. Redman's improvements, with or without Mount E	27	0
	The Rubber Cup of this Facepiece can be removed for cleaning.		
„ 5.	With perforated Disc protecting valves, with or without Mount E	23	0

Facepieces with stuffed pads—

	For hot climates, minus Mount E . . . . . each	17	6
	„ „ with „ . . . . . „	20	0
	Facepieces Figs. 1, 2, 3, 4 and 5 may be had to order with the metal parts nickel-plated instead of lacquered, at an extra cost of . . . . . each	2	6

Air Caps as fitted to Braine's facepiece (see illustration, A, B, on page 27) can be fitted to facepieces Figs. 1, 2 and 3, at an extra cost of . . . . . each 5 6

FACEPIECE PADS, ETC.

		s	d.
Pads, best sheet rubber, with Tap, for Fig. 1 Facepieces .	each	5	0
„ „ „ without Tap „ „ .	„	3	9
Stuffed Facepiece Pad, best sheet rubber, for hot climates .	„	3	9
Two-way Stopcocks—C, Lacquered	„	7	6
„ „ „ Nickel-plated	„	9	0
Mount D for Worsted-covered Tubing, Lacquered . .	„	1	6
„ „ „ Nickel-plated . .	„	1	9

ARTICLES (VARIOUS).

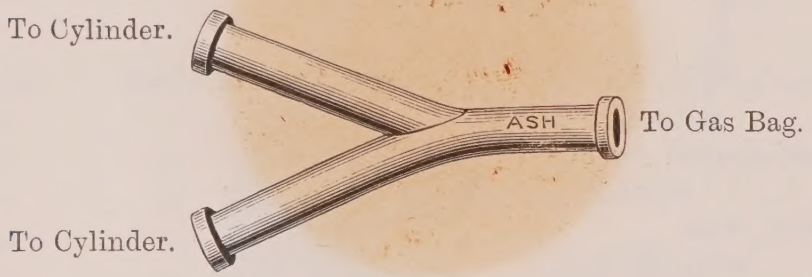
Mount with Stopcock for Supplemental Bag.

	s.	d.		s.	d.
In brass, lacquered,	7	0 ;	nickel-plated,	8	0

Single Union for Cattlin's Bag.

	s.	d.		s.	d.
In brass, lacquered,	3	6 ;	nickel-plated,	4	0

UNION FOR GAS CYLINDERS.

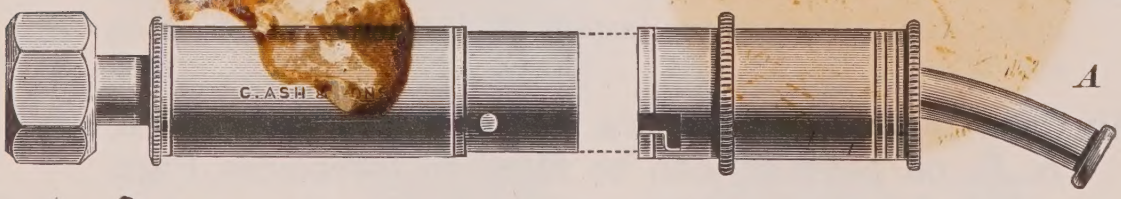


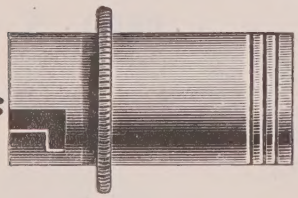
HALF SIZE.

Two Gas Cylinders, like the one shown on page 4, can be joined together by attaching short lengths of India-rubber tubing to their outlet valves ***A***, and slipping the free ends over the two tubes marked "To Cylinder" of the Y-shaped union here illustrated.

	s.	d.
PRICE of Union, in lacquered brass.	2	6

GAS QUIETERS.





Quieter with Mount ***A*** for attaching to the India-rubber tubing of Cattlin's Bag and the outlet screw of Gas Cylinder.

	s.	d.		s.	d.
In brass, lacquered,	9	6 ;	nickel-plated,	10	6

Quieter with Mount ***B*** in place of mount ***A*** for attaching to Cattlin's Bag when it is fitted with worsted-covered tubing instead of small India-rubber tubing.

	s.	d.		s.	d.
In brass, lacquered,	8	0 ;	nickel-plated,	9	0

CATTLIN'S BAGS.

In black sheet rubber, red vulcanised rubber, light check material, and waterproof silk.

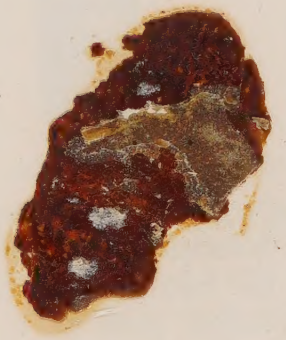
The light check Bags are useful for hot climates.

The silk Bags are made in three patterns, actual samples of which are here given. They are light, cleanly, attractive, durable, and quite suitable for all climates.

700 *A*.

700 *B*.

700 *C*.



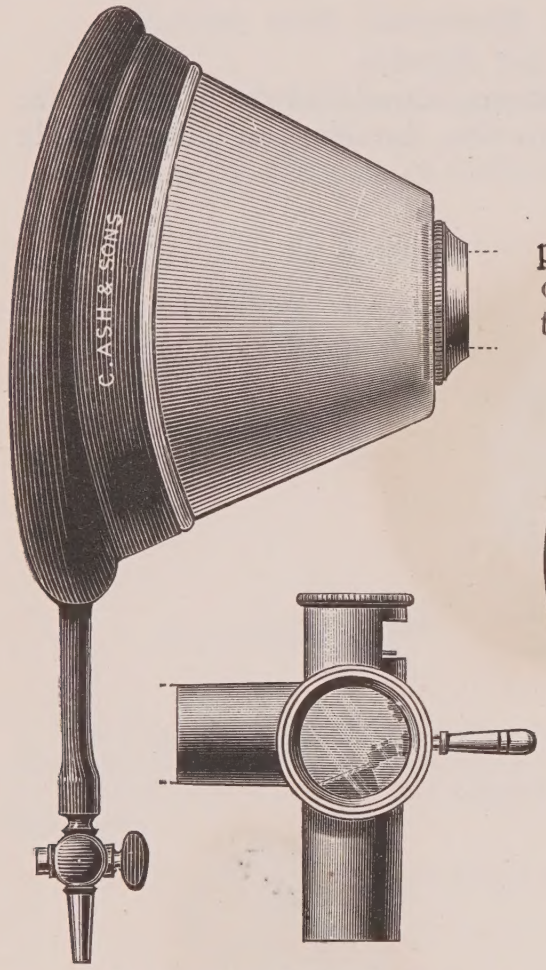
All kinds, same prices:

	Bag only. £	*s.*	*d.*	Bag with Tubing and Mounts. £	*s.*	*d.*	Complete with Quieter. £	*s.*	*d.*
Three-Gallon size . . .	0	15	0	1	7	6	1	12	0
Five „ „ . . .	1	0	0	1	12	6	1	17	0
Seven „ „ . . .	1	1	0	1	17	0	2	2	0

Supplemental Bags—see G, Fig. 1, page 20—are also made in the four kinds of material mentioned above.

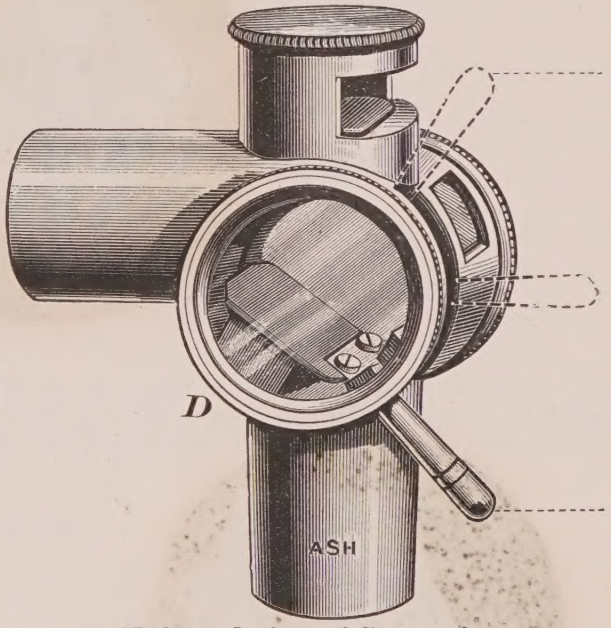
		s.	*d.*
PRICE, any kind	each	7	0
„ „ complete with Stopcock . . .	„	14	0

CELLULOID FACEPIECE AND WELLER'S ASEPTIC THREE-WAY STOPCOCK.



Facepiece and Stopcock.

The chief feature about this **Facepiece** is that it is roomy enough to go over a Mason's Gag when it is fixed in the mouth.



Enlarged view of Stopcock.

The enlarged view of the **Stopcock** shows its construction so clearly that little description of it is needed.

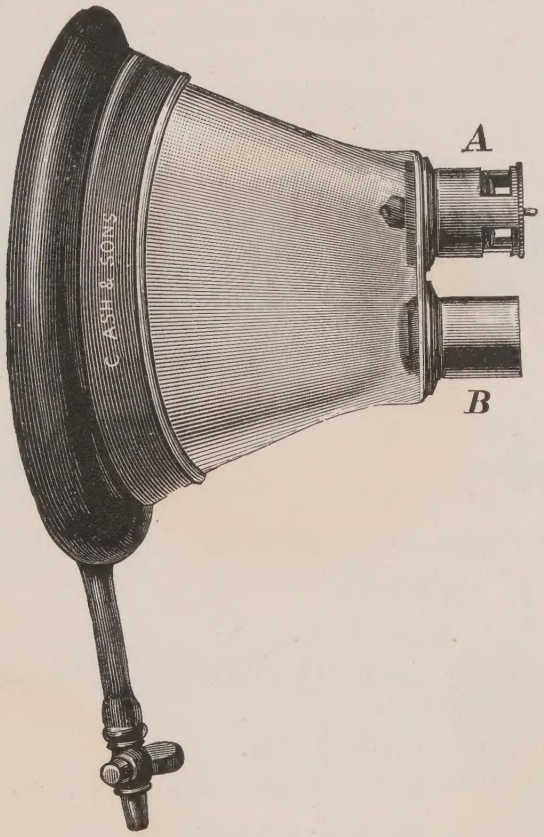
When the handle is set in the lowest position at ***A***—marked Air—the patient breathes pure air; when at ***B***—marked Valves—nitrous oxide; and when at ***C***—marked To-and-fro—he continues to breathe into and from the Cattlin's Bag without the addition of either fresh air or nitrous oxide.

The inside of the stopcock can be readily and thoroughly cleansed by removing the rim ***D*** on each side. When in use the action of the shutter can be seen through the celluloid discs which are fixed in the two rims.

To dismount, unscrew the milled rim with celluloid disc ***D*** on each side of the stopcock; then unscrew and remove handle ***C*** and push out the drum, *i.e.*, the inner portion. It is now possible to examine and clean all the parts; moreover, they can as easily be replaced as removed. Owing to its simple construction and the facility with which it can be taken to pieces and put together again the Anæsthetist is enabled to keep it in a perfectly wholesome condition with very little trouble or loss of time.

	£	*s.*	*d.*
Celluloid Facepiece	0	13	6
Weller's Aseptic Three-way Stopcock	1	5	0

ASH'S CELLULOID FACEPIECES.



Celluloid Facepieces have met with so much favour that they are now used in all parts of the world.

The various forms in which they are made are stronger and much more durable than the pure rubber Facepieces hitherto supplied.

	s.	*d.*
Facepiece with Valves	22	6
„ with Mount for Ether or Supplemental Bag .	25	0
Celluloid Facepieces without Valves for Dr. Hewitt's Apparatus	13	6

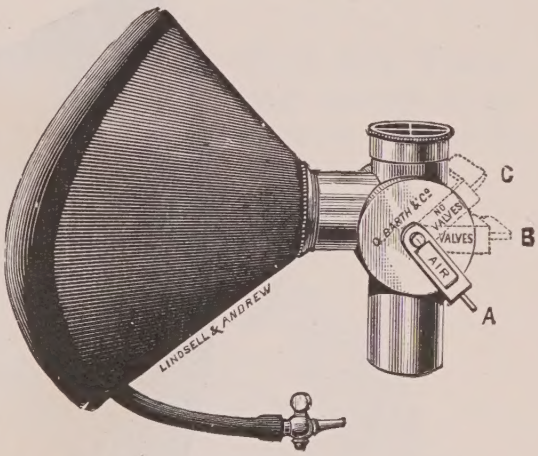
BARTH'S FACEPIECES

WITH PATENTED COMBINATION

STOPCOCKS AND VALVES.

FIG. 1.

FIG. 2.



The following advantages are claimed for these Stopcocks and Valves :—

1. Simplicity.
2. Compactness.
3. Non-liability to get out of order.
4. Lightness.
5. Diminished cost.
6. Economy of gas when required.

The essential feature in the invention is this : The Valves, instead of being attached to the facepiece, are fixed in the stopcock, and are consequently available for any number of facepieces. A clear saving of expense is thus effected, which will be readily appreciated when it is stated that a new facepiece, as shown above without valves, costs rather less than half the amount of one with valves. These combined stopcocks and valves are made in two forms.

Fig. 1 has two movements. When the handle of the stopcock is placed at A, communication with the gas-bag is shut off, and air is admitted ; when the handle is placed at B, communication with the gas-bag is opened, and the gas is inhaled through the inspiratory valve, and exhaled through the expiratory valve.

Fig. 2 has three movements, two of which correspond with the two in Fig. 1—marked A (Air) and B (Valves) in the above illustration, Fig. 2. By raising the handle to C (marked No Valves) the valves are thrown out of action, and the gas is breathed from and re-breathed into the bag in just the same manner as when a supplemental bag is used with the old form of facepiece.

The Combination Stopcocks and Valves can be fitted to any form of Facepiece, but the two shown above, for which they are especially designed, are made of rubber, with fixed India-rubber pads.

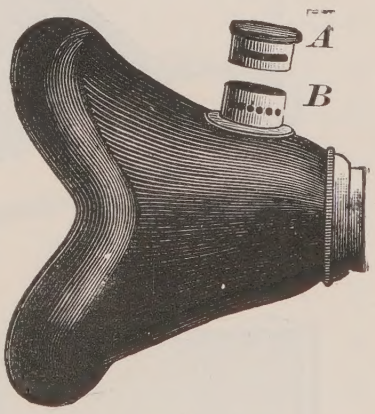
BARTH'S FACEPIECES—*continued.*

	£	*s.*	*d.*
Fig. 1. Stopcock, Nickel-plated—minus Facepiece	1	0	0
„ Lacquered Brass „ „	0	18	6
Fig. 2. Stopcock, Nickel-plated—minus Facepiece	1	2	6
„ Lacquered Brass „ „	1	1	0
If fitted with Barth's Improved Hair-spring Valves extra	0	2	0
Facepieces for Figs. 1 and 2 Stopcocks, large, medium or small, with Nickel-plated or with Brass mounts extra each	0	11	6
Celluloid Facepieces, „ „ „ „ „	0	13	6

FACEPIECE FOR ADMINISTERING AIR IN COMBINATION WITH NITROUS OXIDE GAS.

(Introduced by Mr. C. Carter Braine, F.R.C.S.)

Mr. Braine gives the following directions for administration :—Commence with all the holes covered, and after the patient has taken two, or perhaps three, inspirations of gas, and the gas-bag has become lax, turn on one or two of the air-holes. Do not allow the gas-bag to become distended, or very little, if any, air will enter through the perforations. Turn on more holes according to your patient's condition ; thus, children and anæmic women require more air, and the powerful adult less. Should too many holes be exposed, and the patient fail to become anæsthetised, then rotate the cap in the opposite direction and lessen their number.



A. Cap with slot.
B. Mount with six holes for admitting varying proportions of air.

It will be understood that air by this method is administered with the gas continuously, almost from the very commencement of the inhalation, and, speaking from my own experience, the results have, so far, been better than when the intermittent administration of air has been employed. When nitrous oxide with oxygen is not available, the administration of nitrous oxide and air will be found to yield the next best results in the great majority of dental cases.

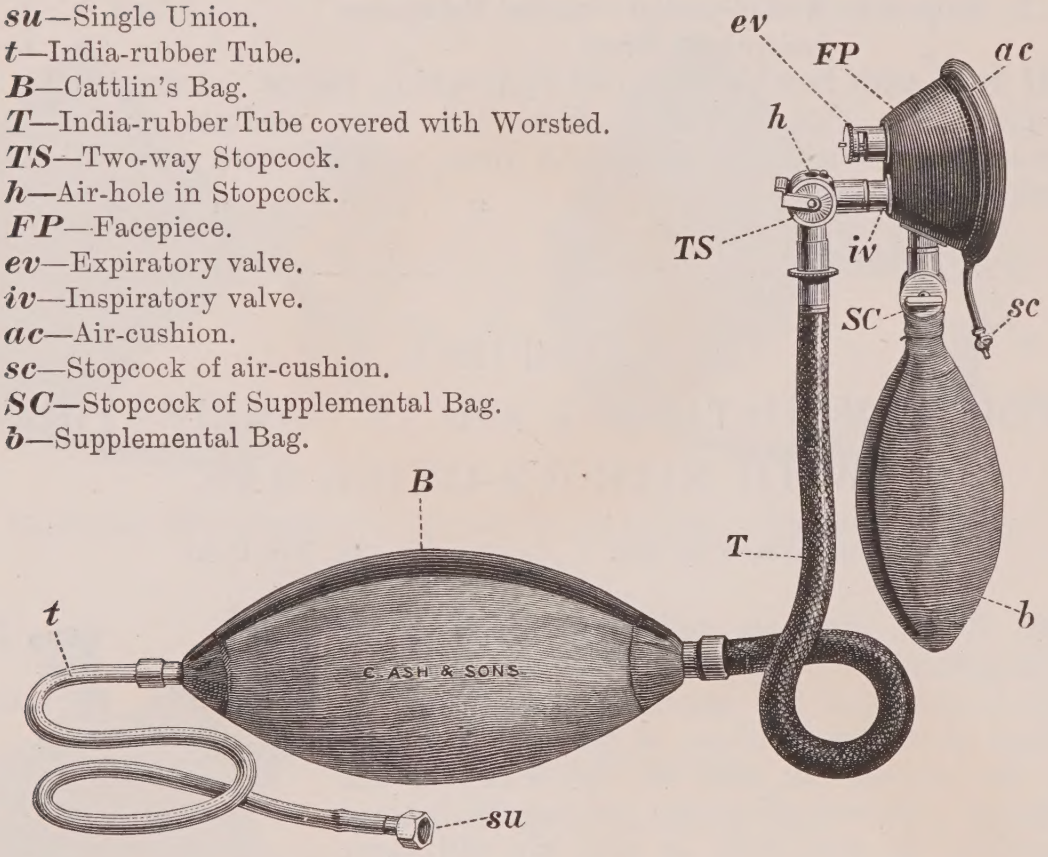
	s.	*d.*
Price of Facepiece	23	6
Air Caps similar to ***A B*** in above illustration can be fitted to ordinary Facepieces, Figs. 1, 2, 3 (see page 20), at an extra cost of . . . . . each	5	6

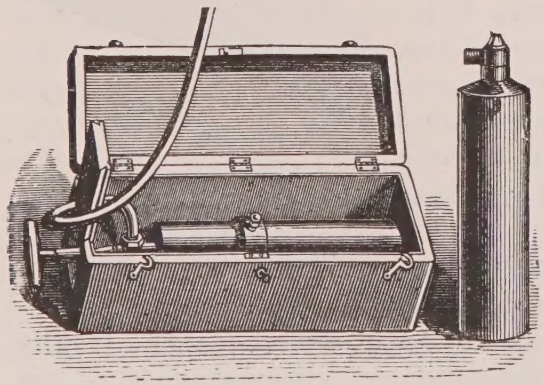
ASH'S PORTABLE GAS OUTFITS,

FOR THE ANÆSTHETIST WHEN VISITING.

DESCRIPTION:

su—Single Union.
t—India-rubber Tube.
B—Cattlin's Bag.
T—India-rubber Tube covered with Worsted.
TS—Two-way Stopcock.
h—Air-hole in Stopcock.
FP—Facepiece.
ev—Expiratory valve.
iv—Inspiratory valve.
ac—Air-cushion.
sc—Stopcock of air-cushion.
SC—Stopcock of Supplemental Bag.
b—Supplemental Bag.





In addition to the Bags, Facepiece, and Tubings shown above, the Leather-covered Case here illustrated will hold a cylinder of Gas, with Key, a second Facepiece, a set of Gags, etc.

NOTES.

"One great advantage of the Supplemental Bag is that while it continues to empty itself and refill, there can be no doubt that respiration is being properly performed; it is an unfailing index of the state of this all-important function."—*A. S. Underwood.*

Mr. Braine says: "It may be urged against this method that the patient rebreathes the carbonic acid of his own expired air, and this is true; but from the length of time I have employed this plan, and from never having seen any deleterious results from it, I do not attach any importance to the objection."

ASH'S PORTABLE GAS OUTFITS—*continued.*

Outfit, consisting of—

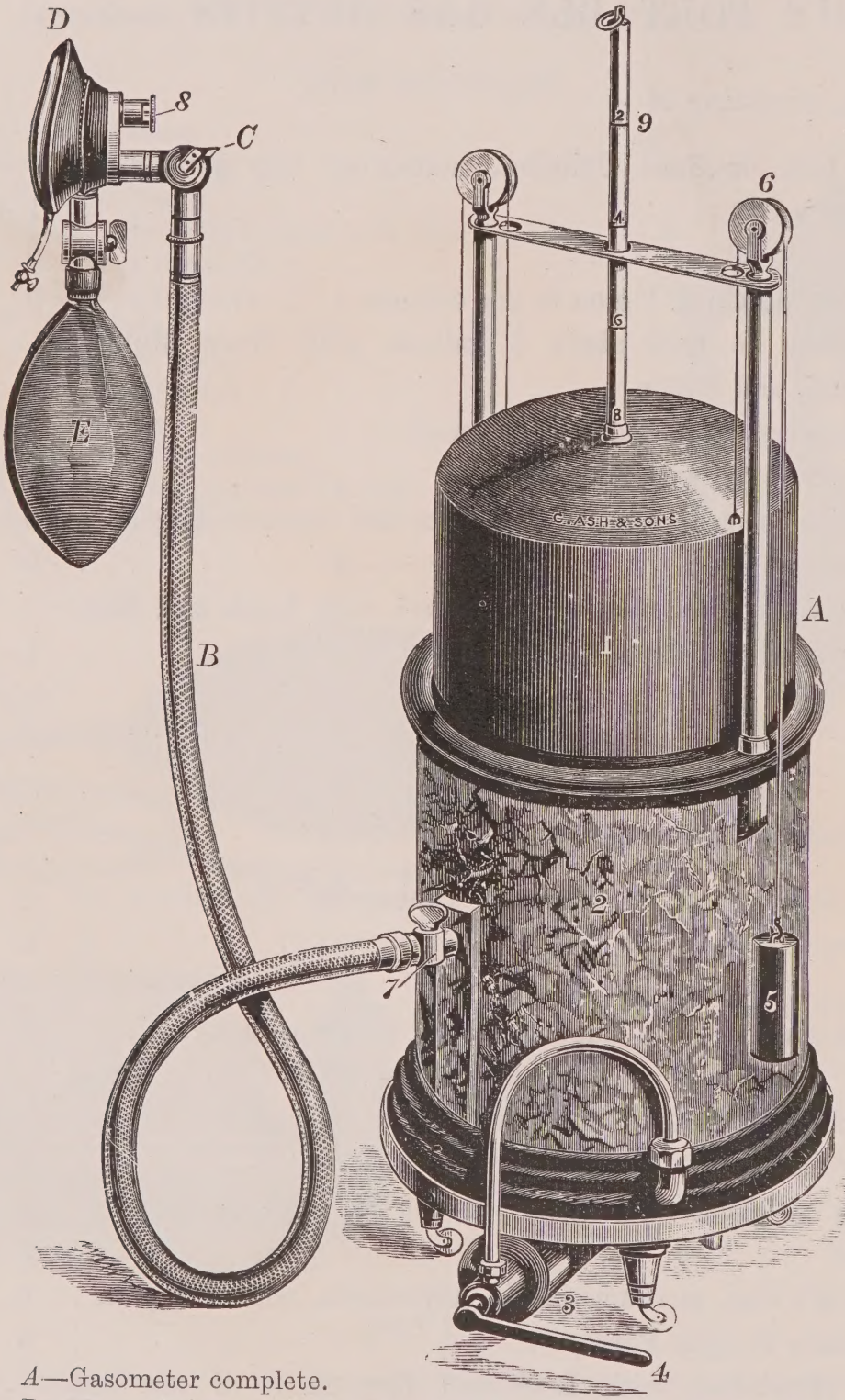
	£	*s.*	*d.*
Wrought-Iron or Steel Cylinder, containing 100 gallons of Spurge's Gas	1	10	0
Gas Key	0	2	6
Spanner for attaching Union to gas cylinder	0	2	6
Cattlin's Bag to hold about 3 gallons, with Brass Mount, Tubing, and Union	1	7	6
Two Facepieces, large, medium, or small	2	0	0
Supplemental Bag, with Stopcock	0	14	0
Two-way Stopcock to connect Facepiece and Cattlin's Bag	0	7	6
Set of 3 simple Gags	0	3	9
Leather-covered Case (16¾ by 6¾ inches), with Lock and Key, to hold all the above Apparatus	1	0	0
	£7	7	9

Alternative Outfit, consisting of—

	£	*s.*	*d.*
Wrought-Iron or Steel Cylinder, containing 50 gallons of Spurge's Gas	1	5	9
Gas Key	0	2	6
Pedal Attachment for a single cylinder, with Spanner	1	1	0
Cattlin's Bag, to hold about 3 gallons, with Tubing, Brass Mount, Union, and Gas Quieter	1	12	0
Two-way Stopcock	0	7	6
Two Fig. 3 Facepieces, minus Mount E, large, medium, or small	1	15	0
Dr. Hewitt's Gag, medium size, in Aluminium, with lead pads	0	3	6
Mr. Braine's Tongue Forceps	0	9	0
Leather Hand-Bag, with Lock and Key, made of the best Cow-hide, to hold the above Outfit	1	4	0
	£8	0	3

ASH'S GASOMETER OUTFITS,

FOR USE IN THE OPERATING ROOM.



A—Gasometer complete.
B—Worsted-covered Tubing leading from Facepiece, etc., to Gasometer.
C—Two-way Stopcock connecting Facepiece with Worsted-covered Tubing.
D—Clover's Facepiece with movable India-rubber Pad.
E—Supplemental Bag attached to Facepiece.

1—Drum of Gasometer.
2—Water Holder.
3—Gas Cylinder.
4—Key for releasing the Gas.
5—Weights for raising the Drum.
6—Pulleys and brass Uprights.
7—Outlet Tap of Gasometer.
8—Expiratory Valve of Facepiece.
9—Centre brass Indicating Rod.

ASH'S GASOMETER OUTFITS—*continued.*

The Gasometer shown on the previous page is made expressly for holding Nitrous Oxide Gas to be used in the Operating Room. It is illustrated with all the necessary parts attached that are required to make it complete and ready for use. Before the Gas is admitted, the Drum (No. 1) should be pressed down as far as it will go, and the Water Holder (No. 2) should be filled with pure water up to within about an inch of the top. The water requires renewing about every two months.

The centre brass rod, which is divided into intervals of 2 gallons each, indicates the quantity of Gas in the Gasometer at any given time. To ensure having sufficient for each operation, the Gasometer should be filled for each patient.

When the Gas Cylinder is empty, it can be replaced by a full one in a few minutes.

	£	*s.*	*d.*
Gasometer, made of zinc and tastefully japanned in imitation of marble, to hold 8 gallons of Gas	6	0	0
Cylinder containing 100 gallons of Coxeter's, Clarkson's, or Spurge's Liquid Gas	1	10	0
Gas Key	0	2	6
Six feet of India-rubber Tubing, ¾ inch diameter, covered with worsted and wired inside	0	11	0
Two-way Stopcock in lacquered brass	0	7	6
Mount for upper part of worsted tubing	0	1	6
Two Clover's Facepieces, large and medium	2	0	0
Supplemental Bag, with Stopcock	0	14	0
Set of Gags, three sizes	0	3	9
Spanner	0	2	6
Complete	£11	12	9

	£	*s.*	*d.*
Gasometers, as illustrated, 12-gallon capacity	6	10	0
Either size Gasometer fitted with two sets of rings underneath for holding two cylinders of Gas, and bent pipe with double union for connecting them, at an extra cost of	1	7	6

The Apparatus can be varied to any extent that may be desired.

COLEMAN'S NASAL ANÆSTHETISER.

MUCH SIMPLIFIED AND IMPROVED

By Mr. R. P. LENNOX, of Cambridge.

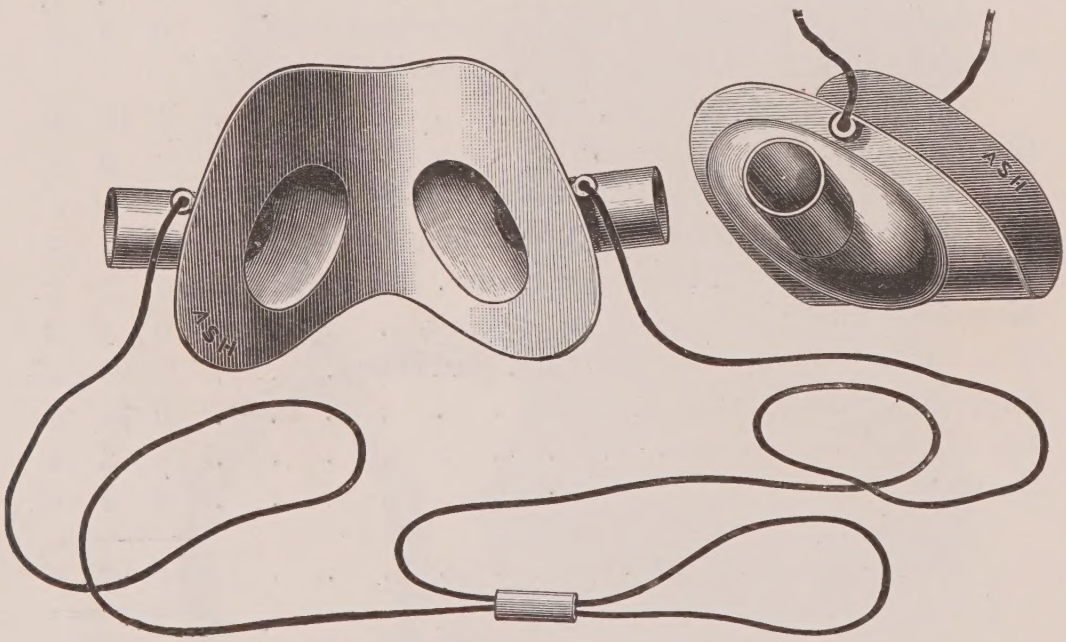
(Registered. Reg. No. 367,052.)

FOR PROLONGING NITROUS OXIDE GAS ANÆSTHESIA.

This new and improved form of Coleman's Anæsthetiser consists of a simple plate of metal shaped and bent so as to touch the lower surface of the nose closely all round the nostrils, and there only.

In the plate are two holes answering to the nostrils, and into these are inserted two metal tubes, half an inch long, for conveying nitrous oxide to the nostrils. Being wholly of metal, it is readily sterilised after each operation, and being only a plate, it may be readily bent to suit noses of peculiar formation. It is held in position under the patient's nose by a thin piece of elastic passing over the head of the patient, and adjusted to the head by means of a short tube sliding on the elastic.

FIG. 1.



Inside and Outside Views of the Nasal Anæsthetiser.

In this form of Anæsthetiser the softer parts of the nose act as pads, effectually preventing any passage of the gas during the operation except through the nostrils. The Anæsthetiser is consequently silent in action. It has the further advantages that it leaves the whole of the face exposed, allows the operator to raise the upper lip to any extent he may find necessary, and also to work freely at the right lower jaw with hawk's-bill forceps in a way that the earlier form of Nasal Anæsthetiser did not admit of.

LENNOX'S SIMPLIFIED AND IMPROVED COLEMAN'S NASAL ANÆSTHETISER—*continued.*

The apparatus for conveying gas from the gas cylinder to this Anæsthetiser consists of a spiral copper tube, designed by Mr. S. A. Coxon, of Wisbech, connected directly with the cylinders, and immersed in a reservoir of boiling water. The gas, on leaving this coil, passes a two-way stopcock, one outlet of which leads to the ordinary bag and face-piece, while the other leads to a smaller bag and the Nasal Anæsthetiser.

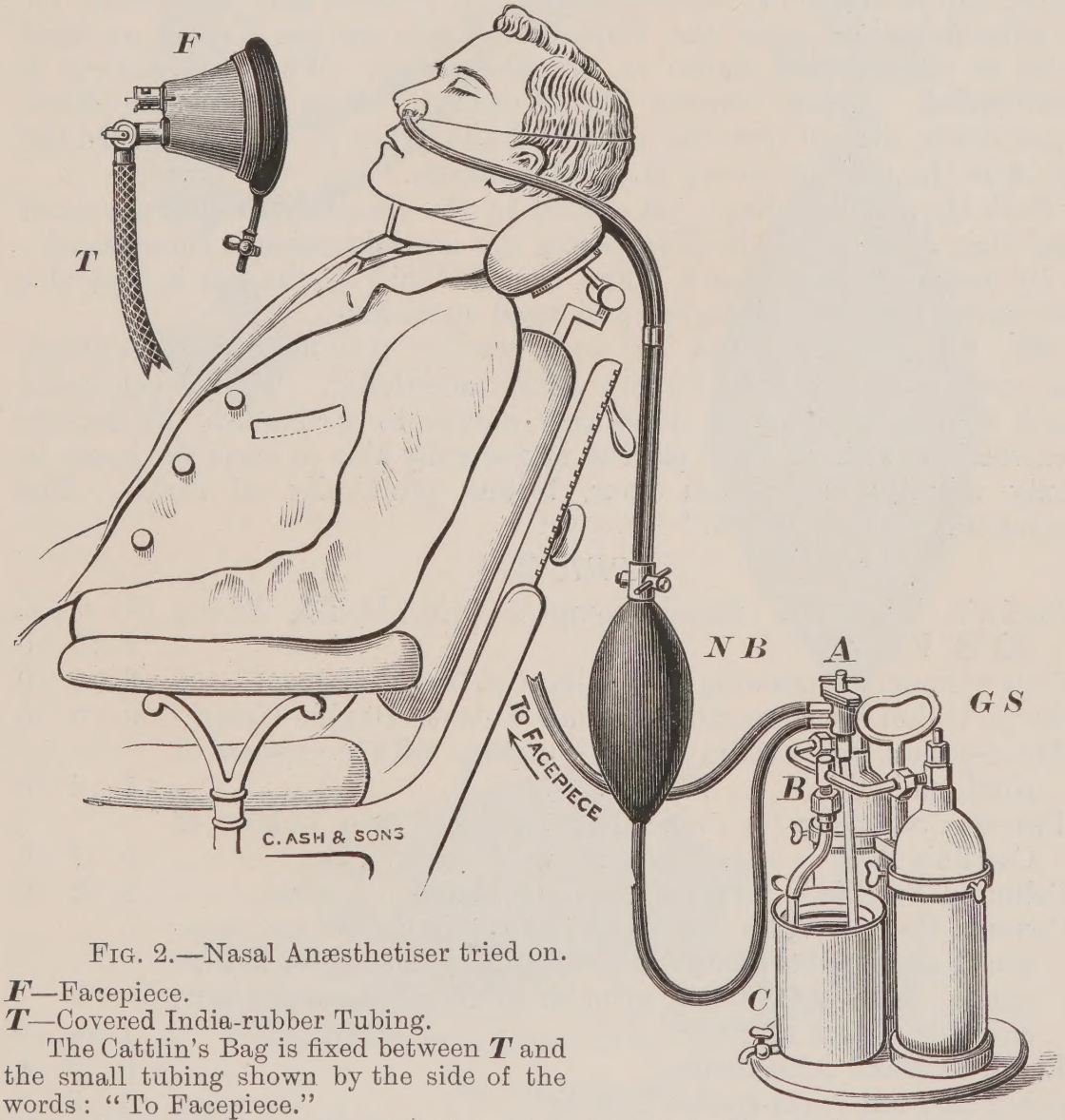


FIG. 2.—Nasal Anæsthetiser tried on.

F—Facepiece.

T—Covered India-rubber Tubing.

The Cattlin's Bag is fixed between ***T*** and the small tubing shown by the side of the words: "To Facepiece."

N B—Bag with Stopcock and India-rubbing Tubing leading from the Gas Cylinders to the Nasal Anæsthetiser.

A—Tap which controls the distribution of the Nitrous Oxide Gas. When set as shown in the illustration the Gas passes to the Nasal Anæsthetiser, and when set at right angles to this position it passes to the Facepiece.

B—Double Union; ***C***—Mr. Coxon's Spiral Copper Tube in Reservoir for warming the Gas. Before an operation this Reservoir should be filled with boiling water.

G S—Napier's Gas Stand with Cylinders, etc., connected up ready for use.

LENNOX'S SIMPLIFIED AND IMPROVED COLEMAN'S NASAL ANÆSTHETISER—*continued.*

Fig. 2 shows the Apparatus ready for use. To prepare it for use connect the two Gas Cylinders to the Double Union, and Mr. Coxon's Tube ***C*** to same with the Single Union as shown at ***B***, and fill the Reservoir ***C*** with boiling water. Then attach Tubing leading to the Facepiece to the upper Pipe near ***A***, and the Tubing leading to the Nasal Anæsthetiser to the lower Pipe. Try on the Nasal Anæsthetiser as shown in the illustration, slip it back on to the forehead of the Patient, and, when ready for the administration, apply the Facepiece ***F*** and set the Tap ***A*** at right angles to the position shown in the illustration. When the Patient is anæsthetised, quickly remove the Facepiece, draw down the Nasal Anæsthetiser, place it over the nostrils without loss of time, and turn the Tap ***A*** to the position shown in the illustration.

Both the Cattlin's Bag—not shown in the illustration—and the small Nasal Bag ***N B*** should be filled before the administration is commenced.

By means of Mr. Coxon's Spiral Copper Tube ***C*** the Gas is kept at a comfortable temperature during prolonged operations.

Mr. LENNOX says: "In our own practice this method has entirely done away with the need for any other anæsthetic. We have cleared a mouth without pain, and it is an easy matter to accomplish any number of extractions with it. The patient is generally able to leave the house in twenty minutes or half an hour, feeling practically all right. The apparatus is a great success."

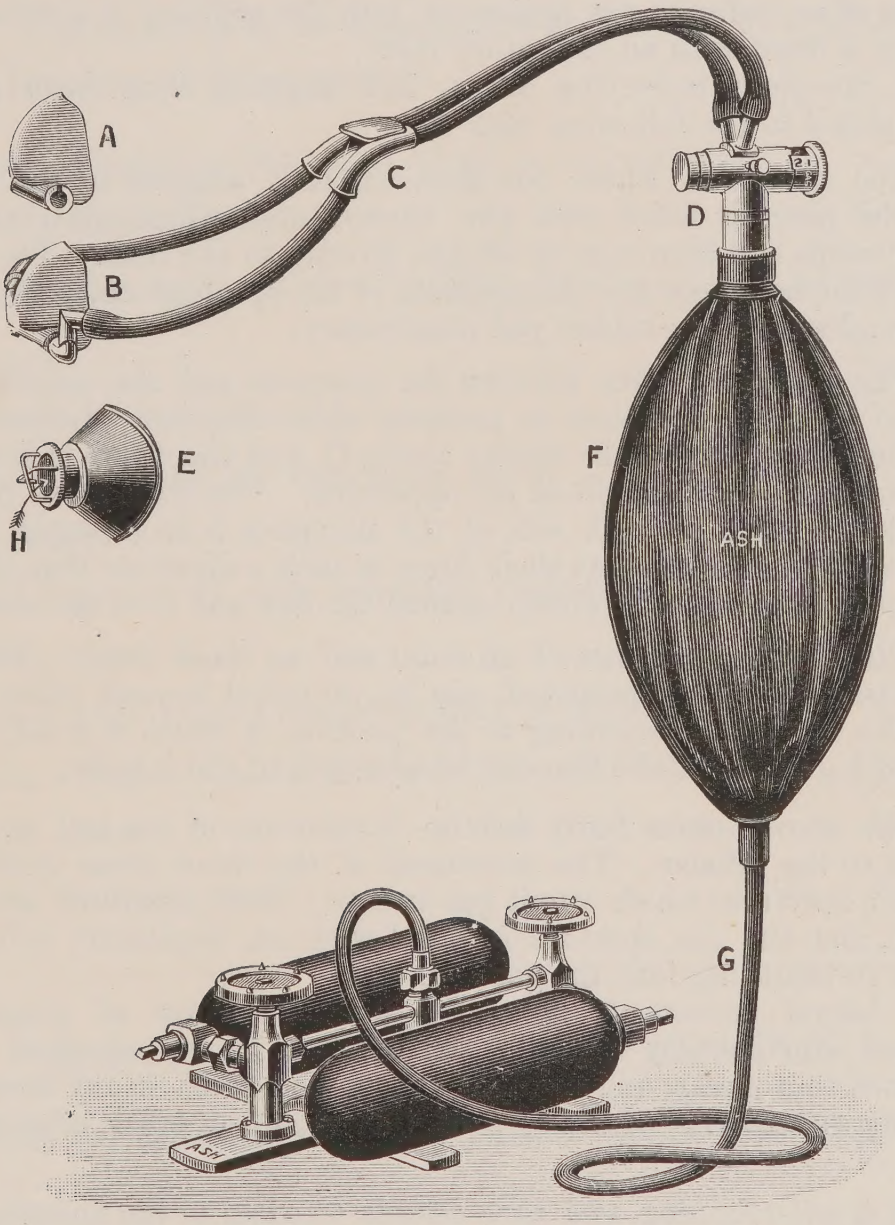
PRICES:

	£	*s.*	*d.*
1 Napier's Twin Gas Stand, complete with Double Union (**G S**, Fig. 2)	1	10	0
2 Steel cylinders containing 100 gallons of Gas	3	0	0
1 Single Union for connecting Coxon's Tube to Double Union.	0	3	6
1 Three-gallon size Cattlin's Bag, complete with exception of single union	1	4	0
1 Two-way Stopcock for connecting Facepiece with Tubing of Cattlin's Bag	0	7	6
1 Celluloid Facepiece, large, medium, or small	1	2	6
1 Coxon's Copper Water Reservoir, with spiral tube and stopcock; also one stopcock for connecting nasal bag **N B** with tubing leading from gas cylinder to Nasal Anæsthetiser; and with chain, etc.	1	16	0
1 Lennox's Nasal Anæsthetiser	0	9	0
8 feet Thick red India-rubber Tubing	0	8	0
1 Sliding Clip	0	0	6
1 Small Bag	0	3	9
1 Spanner for securing gas cylinder to double union, etc.	0	2	6
1 Gas Key	0	2	6
Complete	£10	9	9

MR. FRANK COLEMAN'S IMPROVED NASAL INHALER.

For prolonging Nitrous Oxide Anæsthesia in Dental operations by the late Mr. Coleman's method.

(REGISTERED. Reg. No. 500,408.)



DESCRIPTION:

A—Nosepiece disconnected.
B—Nosepiece secured to the metal connections and India-rubber conveying pipes.
C—Sliding Clamp.
D—Stopcock.
E—Mouth Cover.
F—Cattlin's Bag.
G—India-rubber Tubing which leads to the union on the Gas Cylinders.

(*It is here shown connected-up.*)

MR. FRANK COLEMAN'S IMPROVED NASAL INHALER—*continued.*

Mr. Frank Coleman says :—

This modified apparatus consists of a nosepiece **B**, conveying tubes and adjusting clamp **C**, and a two-way stopcock **D** ; the remaining parts are those of an ordinary gas apparatus with the addition of a mouth cover **E**, which is fitted with an expiratory valve.

The nosepiece, conveying tubes, and stopcock have been modified and simplified in the following ways :—

1. The nosepiece, which has been carefully adapted to the shape of the nose, is fitted with two lateral tubes which open under the nostrils and thus convey the gas directly to the nose. The snug fit of the nosepiece and the position of the openings under the nostrils render an India-rubber pad unnecessary.
2. The conveying tubes between the nosepiece and the stopcock serve to keep the nosepiece in position, when they are adjusted on the head by means of the sliding clamp **C**, and the clamp is kept where it is set by the weight of the apparatus. The short metal pipe with double bend on each side of the nosepiece is so arranged that the conveying tubes exert their force in such a direction that the nosepiece is brought up evenly against the face and over the nose.
3. The stopcock consists of an outer and an inner drum. The inner drum, which is graduated, can be projected beyond either end of the outer, and according to the position in which it is set, gas, air, or a mixture of the two can be admitted to the inhaler.

By the above means fairly definite proportions of gas and air can be admitted to the inhaler. The movement of the inner drum controls the size of the apertures which admit gas and air ; both apertures are similar in shape, and the gas aperture is fitted with an inspiratory valve which prevents re-breathing into the gas bag.

The lateral movements associated with this form of stopcock are easily and conveniently applied ; the amount of air admitted can be determined to a nicety, and modified as may be desired at any moment.

Briefly stated, the advantages of this modified nasal inhaler are as follows :—

1. It is self-retaining, and thus affords freedom to the anæsthetist for inserting a gag or for helping the Operator in other ways.
2. The metal nosepiece is easily removed and cleansed, and the use of a rubber pad is avoided.
3. The stopcock allows of mixtures of gas and air being admitted to the inhaler, and its movements are perhaps simpler than the movements of those stopcocks which are fitted with various forms of taps.

MR. FRANK COLEMAN'S IMPROVED NASAL INHALER—*continued.*

The inhaler has had an extended trial both by myself and others, and the advantages claimed have thus been fully endorsed in actual practice. I have entrusted its manufacture to Mr. Weller, to whom I am indebted for many useful suggestions.

	£	*s.*	*d.*
PRICE, complete as illustrated, down to and including the Single Union	3	15	0

(*The Cylinder Stand and Gas Cylinders are charged extra, if required.*)

Separately:	*s.*	*d.*
Nosepiece **A**, with lateral tubes	18	0
Stopcock **D**, with two inspiratory valves	17	0
Bag Mount	1	6
Metal Facepiece **E**, with removable expiratory valve .	15	0
Sliding Clamp **C**	5	0
India-rubber Tubing from Nosepiece to Stopcock . .	3	6
Cattlin's Bag, 1½-gallon size, with 5 feet Tubing . .	13	0
Single Union	3	6
Metal Facepiece, small . . . . . extra	15	0

MANUFACTURING APPARATUS.

Outfits for manufacturing Nitrous Oxide Gas supplied to order.

Full working directions are sent with each Outfit.

Estimates furnished on application.

NOTE.—Special Terms are given to Dental and General Hospitals for Liquid Nitrous Oxide Gas in Steel Bottles.

PATERSON'S IMPROVED NASAL INHALER

(REGISTERED),

For Prolonging Nitrous Oxide Anæsthesia in Dental Operations by Mr. Alfred Coleman's Method.

Various methods have from time to time been advocated with a view to prolonging Nitrous Oxide Anæsthesia for operations about the mouth, but so far the lack of a fairly simple and at the same time economical and efficient apparatus for this purpose seems to have proved a formidable barrier against this method being adopted to the extent that it might have been.

In the apparatus here illustrated, Mr. J. H. Paterson claims to have satisfactorily got over the difficulties hitherto preventing the extensive use of Mr. Coleman's method, and in advocating its advantages says :—

"Admitted that it is feasible and safe to prolong nitrous oxide anæsthesia for ordinary surgical operations, the question naturally arises, Can we do so during the progress of operations about the mouth? The advantage of being able so to do must be at once apparent, more especially to dental surgeons. Various methods have been from time to time tried with this end in view. In my opinion the nose is a better channel for administering the gas to the patient than the mouth, for not only is the apparatus used more out of the way of the operator, but (and I think this a point of some importance) the majority of patients during normal gas anæthesia seem to breathe through the nose in preference to the mouth.

"The apparatus consists of a small metal cover, made to fit the nose accurately with the aid of a rubber pad. The pad is detachable, so that the cover can be readily sterilised by boiling. Two small metal tubes are let into the nose-piece, and to these are attached two rubber tubes which lead to an ordinary gas bag, a two-way stopcock intervening. In the apparatus, the nose-piece is placed *in situ*, the bag being filled with gas, and the stopcock turned on. After the patient has taken a few breaths of gas, a celluloid cover is placed over the mouth. At the top of the mouth cover is an expiratory valve. The patient is now breathing gas through the nose only, and expiring through the mouth. I may say that the use of this mouth cover is not absolutely necessary. Its function is two-fold. It diminishes the period of inhalation necessary for the

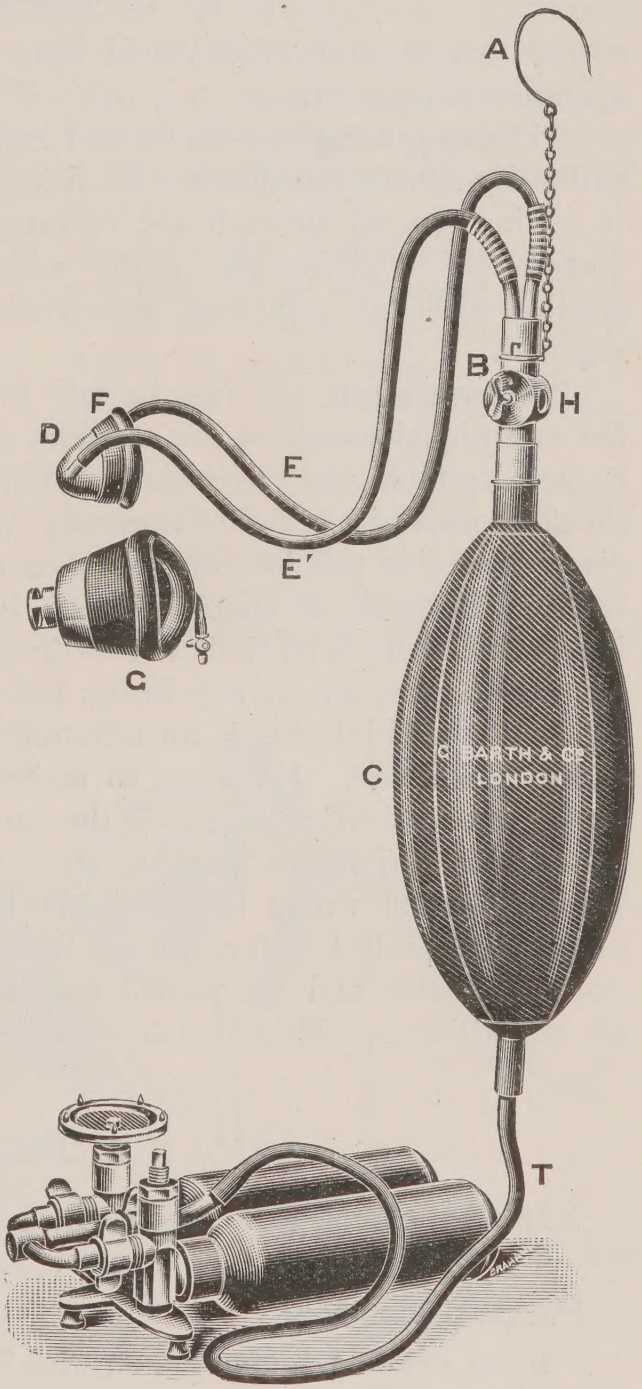
PATERSON'S IMPROVED NASAL INHALER

(*continued*).

production of anæthesia, and consequently economises gas. In about thirty seconds the mouth cover is removed, and the operation proceeded with. The patient is now taking in gas through the nose, and a limited amount of air through the mouth, and there is no difficulty in maintaining anæsthesia; indeed, the stopcock has often to be turned off occasionally, in order to allow the patient to obtain more air than is admitted by the mouth.

"**Results.** — So far the results have been most encouraging.

"The longest period during which I have had the opportunity of maintaining anæsthesia by this means is nine minutes fifty-five seconds. This was at a public demonstration at Cambridge, on a man aged 35. The patient was kept absolutely quiet, and recovered after a very few minutes. During anæsthesia two teeth were prepared for crowning, and eighteen teeth extracted. On twenty-three occasions the anæsthesia has exceeded four minutes, but it must be mentioned that these times represent the actual duration of the operation, and not the total available anæsthesia, which would be twenty or thirty



A—Hook and Chain for attaching Inhaler to coat or waistcoat.
B—Twin Connector.
C—Gas Bag.
D—Nasal Piece.
E E—Tubes leading from Nasal Piece to Twin Connector.
F—Mounts on Nasal Piece.
G—Mouth-Piece.
H—Straight-way Stopcock.
T—Tubing from Gas Bag to Cylinder Stand.

PATERSON'S IMPROVED NASAL INHALER

(*continued*).

seconds longer, and which could have been further prolonged had the operation required it.

"**Disadvantages.**—So far as I know there is only one disadvantage with this method, and that is, that owing to the Anæsthetist being engaged in giving gas all through the operation, he is not so able to assist the operator as in giving gas in the ordinary way. It is, however, quite possible, although somewhat inconvenient, to manipulate the gag when required.

"**Advantages.**—It may be said that this procedure is all very well for exceptional cases, but for ordinary cases gas mixed with air or oxygen is more suitable and is simpler. I venture to hold a contrary view. In the first place, it is not infrequently impossible to foresee whether any given extraction will be difficult or easy. With this method of administration, inasmuch as anæsthesia can be kept up practically as long as is required, there is no limit to the time at the operator's disposal, consequently he need in no way hurry, but quietly proceed with the work he has to do. I think this is an advantage which every dental surgeon will readily appreciate. I venture to maintain that the ordinary method of dosing the patient with gas to the utmost limit, so as to maintain the anæsthesia as long as possible after the removal of the facepiece, is unscientific and wrong in principle. In this method the administration need not be pushed so far, the anæsthesia is carried only to the stage of unconsciousness, and the patient maintained gently under the influence of the gas without pushing it to an extreme degree."

PRICES:

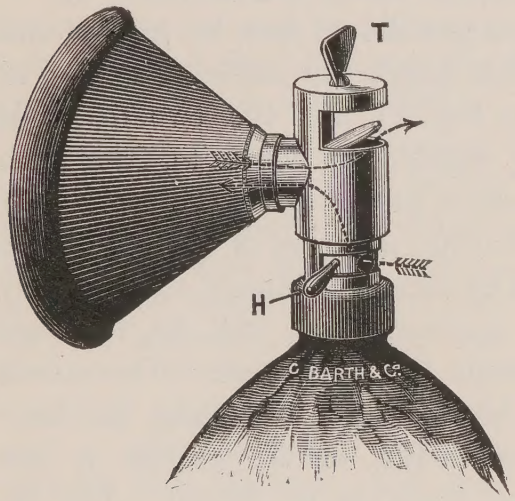
	£	*s.*	*d.*
Inhaler complete as illustrated, minus the Cylinders and Union	2	15	0
Parts separately:			
Nasal Piece **D** in aluminium, with Tubes **E E**	0	14	0
Ditto in Celluloid, with Tubes **E E**	0	17	0
Straight-way Stopcock **H**, with twin Connector **B** for India-rubber Tubes	0	12	0
Small Gas Bag **C**, with mount for straight-way stop-cock, and Tubing **T**	0	13	6
Mouth-Piece **G** in celluloid	0	16	0
Single Union	0	3	6

DR. HEWITT'S INHALERS.

(BARTH'S MAKE.)

Facepiece, Stopcock, and Gas Bag for the administration of Nitrous Oxide Gas only.

FIG. 3.



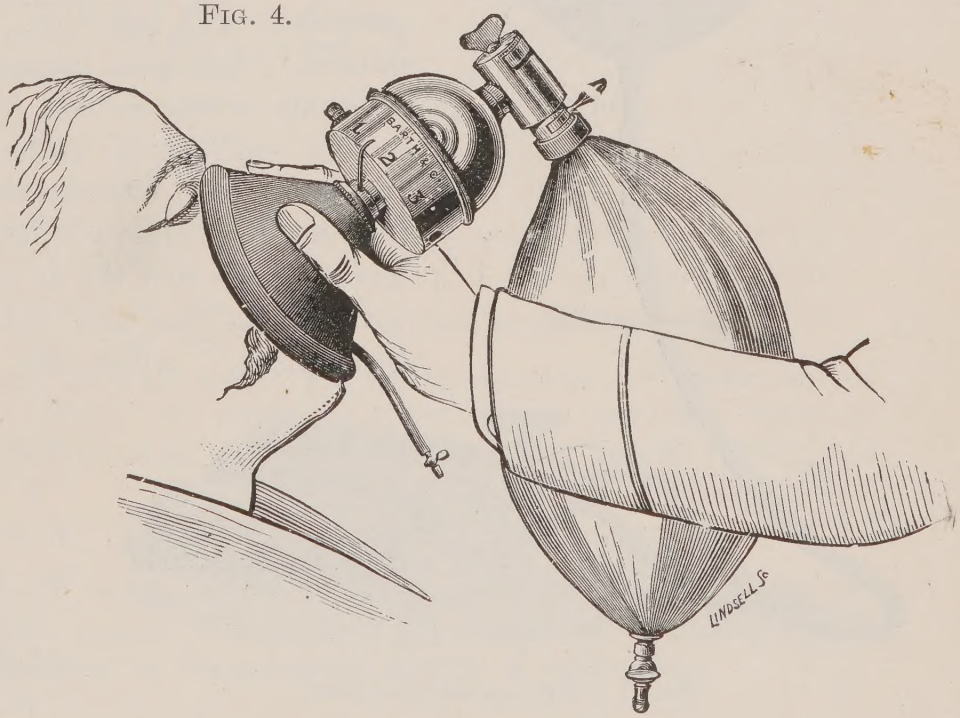
DESCRIPTION:

T—Tap controlling Valves.—When it is turned as shown in Fig. 3 the valves in the stopcock act and all expirations escape.

H—Handle which determines whether Air or Nitrous Oxide is breathed.—When H is arranged as in Fig. 3 the air-hole is open and air is breathed; when it is turned so that the air-hole closes, Nitrous Oxide is breathed instead of air.

N.B.—Should the Nitrous Oxide fall short, or should the administrator wish to convert the gas bag into a "Supplemental Bag," the valves can at once be thrown out of action by turning the handle T, and the patient will then breathe into and from the bag.

FIG. 4.



Facepiece, Clover's Ether Chamber, Stopcock, and Gas Bag for the administration of Nitrous Oxide and Ether.

When the Ether Chamber is used, Nitrous Oxide with a small quantity of Ether may be administered, or gas only may be given as a preliminary to deep etherisation.

	£	*s.*	*d.*
Hewitt's Nitrous Oxide Inhaler complete, consisting of ordinary Facepiece, Three-way Stopcock, Bag, Vulcanite Tap, Tubing, and Union	3	1	6
The same with Celluloid Facepiece . . . . . extra	0	3	0
Ether Chamber for use with above . . . . . „	2	0	0
„ Bag with Elbow Joint, for administering Ether alone extra	0	9	0

HEWITT'S SIMPLIFIED PORTABLE APPARATUS

FOR ADMINISTERING NITROUS OXIDE AND OXYGEN.

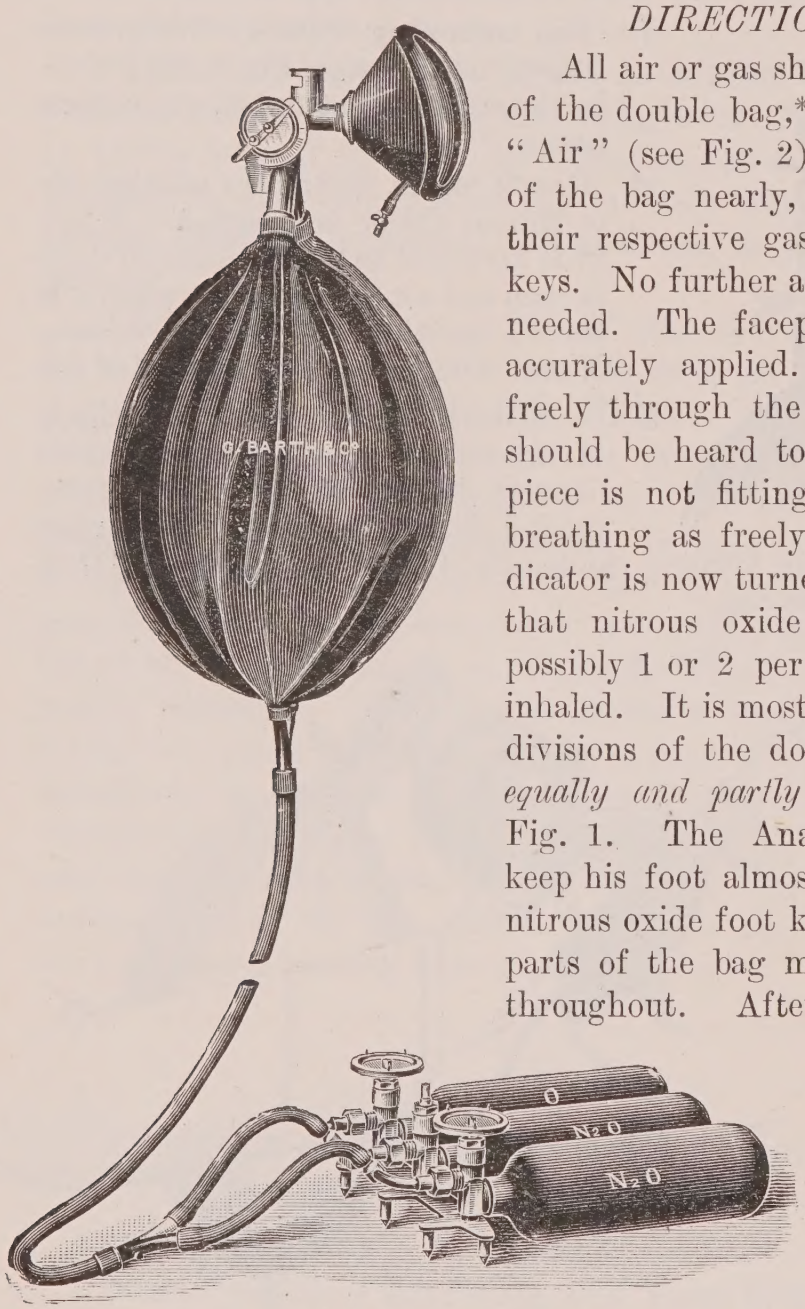


FIG. 1.—Apparatus complete.

DIRECTIONS FOR USE:

All air or gas should first be pressed out of the double bag,* the indicator turned to "Air" (see Fig. 2), and the two divisions of the bag nearly, but not quite, filled with their respective gases, by rotating the foot keys. No further addition of oxygen will be needed. The facepiece should then be very accurately applied. Air will be breathed freely through the apparatus. The valves should be heard to act, otherwise the facepiece is not fitting, or the patient is not breathing as freely as he should. The indicator is now turned to "1," which means that nitrous oxide with a small quantity, possibly 1 or 2 per cent., of oxygen will be inhaled. It is most important that the two divisions of the double bag should be kept *equally and partly distended*, as shown in Fig. 1. The Anæsthetist must therefore keep his foot almost constantly turning the nitrous oxide foot key in order that the two parts of the bag may remain equal in size throughout. After two or three breaths at "1" the indicator should be turned to "2," and progressively, after every two or three breaths, to "3," "4," "5," "6," "7," "8," "9," or "10," according to the type of patient. In children and very anæmic persons the indicator may be placed at "2," "3," or even "4," to start with, and turned to a fresh number every breath or two. But in adults in good health less oxygen must be given.

* It is not advisable to press the bags too tightly, as the suction caused by the sides adhering together has a tendency to draw the valves in the delivery tubes through to the wrong side.

HEWITT'S PORTABLE APPARATUS—*continued.*

IMPORTANT.

As it is essential to the proper working of the apparatus that all the four valves act well, and the ten oxygen inlets be kept entirely clear, it is recommended that the apparatus be taken apart from time to time and the condition of these ascertained.

To Examine Oxygen Inlets.—Take out the three milled head screws, remove the indicator handle with detent spring, replace the centre screw in dial side of stopcock, and pull out the inner drum. If any of the openings appear to be clogged, pass a piece of metal wire of suitable size through each one until quite clear.

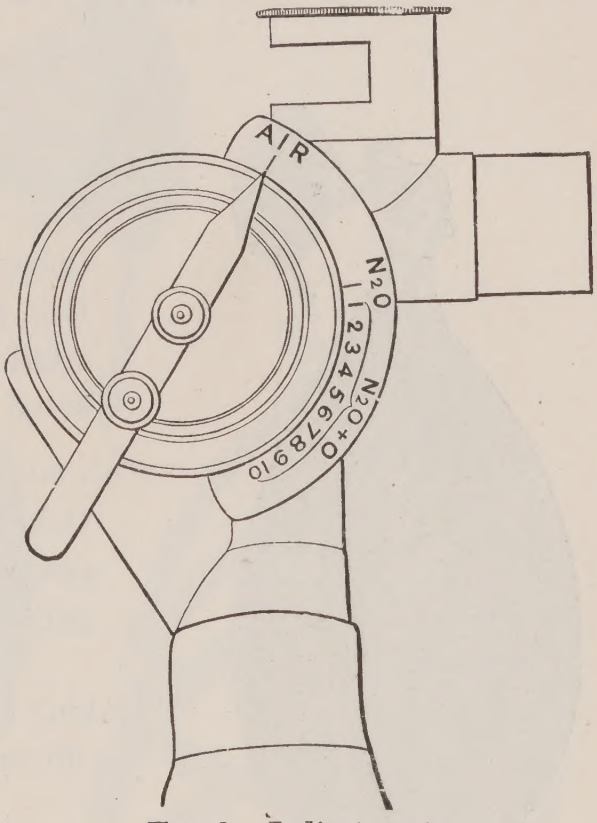


Fig. 2.—Indicator, etc.

Lubricating Inner Drum.—It is very important that no grease or oil be put on that part of the drum which revolves immediately over the oxygen inlets. Any neglect of this will cause them to get choked up, and render it necessary to take the apparatus to pieces again.

To Examine Valves in Delivery Tubes.—Slip off the necks of gas bag one after the other, the valves can then be drawn out of the tubes by the finger. In replacing them always have the inlets to mixing chamber open to avoid the rubber discs being forced through to the wrong side.

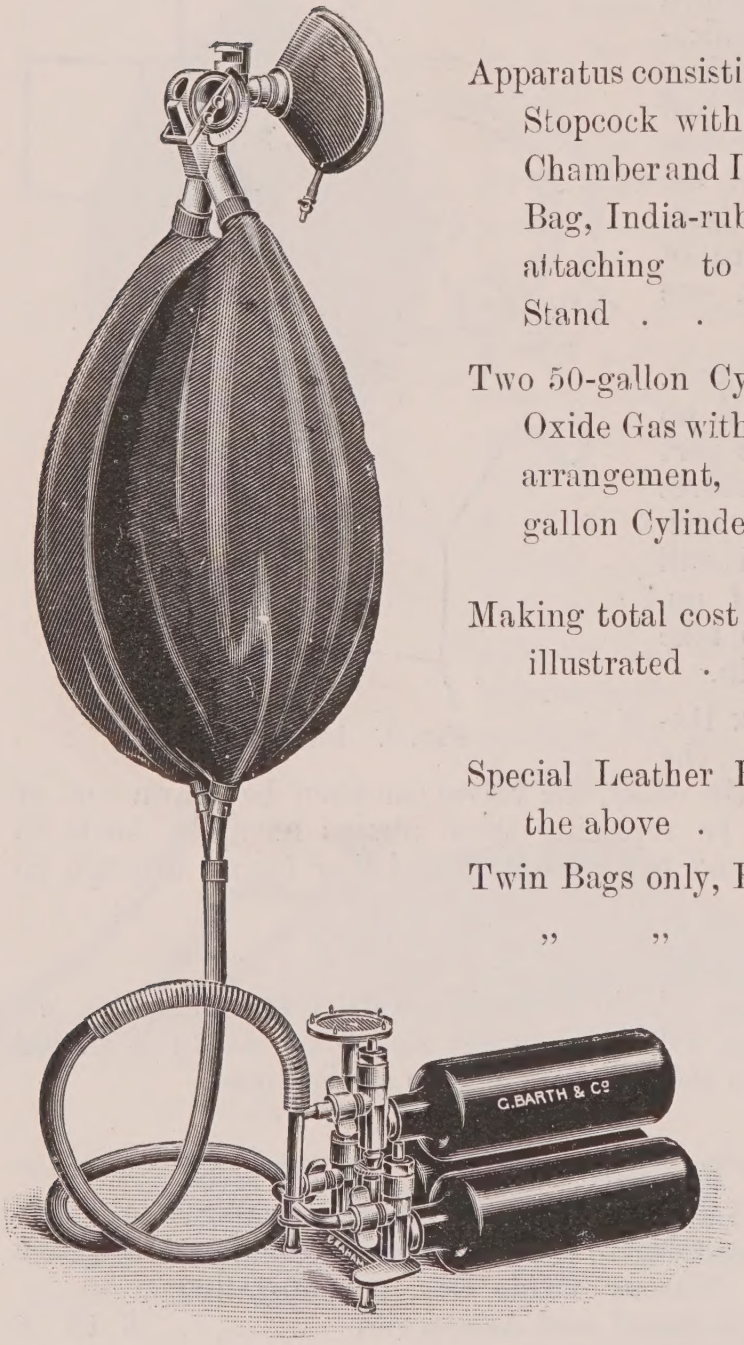
N.B.—The centre screw, which keeps in position and regulates the tension of the detent spring, will in time get somewhat slack; it should then be screwed up again to the necessary degree of tightness.

	£	*s.*	*d.*
Apparatus consisting of Facepiece, Stopcock with Valves, Mixing Chamber and Indicator, Double Bag, India-rubber Tubing, Unions for attaching to the Gas Cylinder Stand .	4	12	6
Two 100-gallon Cylinders Nitrous Oxide Gas, one 30-gallon Cylinder Oxygen, Triple Stand, and Accessories . . .	6	19	6
Complete	£11	12	0

HEWITT'S PORTABLE APPARATUS

FOR ADMINISTERING NITROUS OXIDE AND OXYGEN.

IMPROVED FORM.



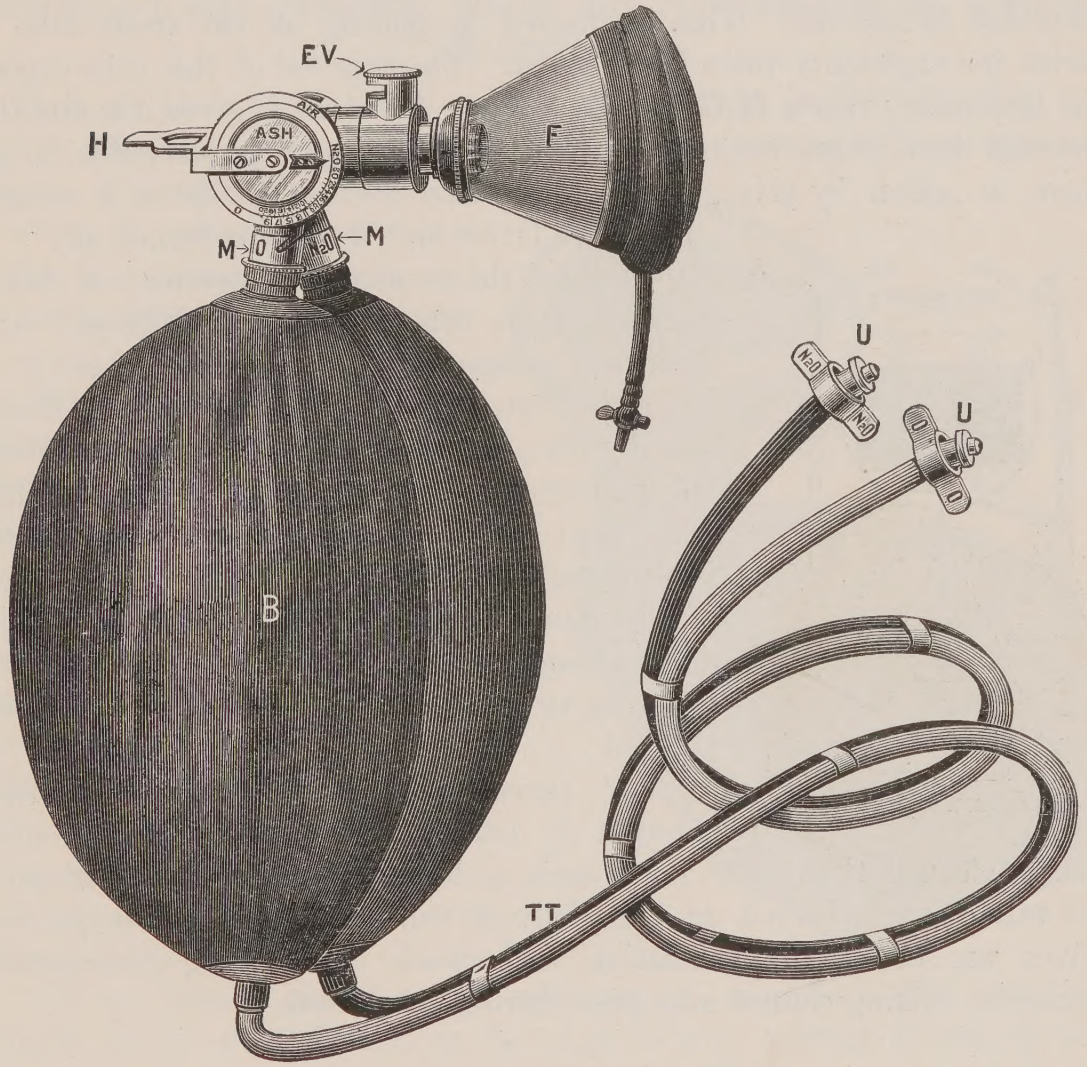
	£	*s.*	*d.*
Apparatus consisting of Facepiece, Stopcock with Valves, Mixing Chamber and Indicator, Double Bag, India-rubber Tubing for attaching to Gas Cylinder Stand	4	5	6
Two 50-gallon Cylinders Nitrous Oxide Gas with complete Pedal arrangement, and one 15-gallon Cylinder Oxygen . .	6	0	9
Making total cost of Apparatus as illustrated	£10	6	3

	£	*s.*	*d.*
Special Leather Bag to hold all the above	4	10	0
Twin Bags only, Black Rubber .	1	3	0
„ „ „ Silk .	1	10	0

N.B.—This is the apparatus which Dr. Hewitt at present uses.

WELLER'S APPARATUS

FOR THE ADMINISTRATION OF NITROUS OXIDE GAS AND OXYGEN.



DESCRIPTION:

F—Facepiece.
H—Regulating Handle.
MM—Mounts.
EV—Expiratory Valve.
B—Twin Bag.
TT—Tubings.
UU—Unions for attaching to Gas Cylinders.

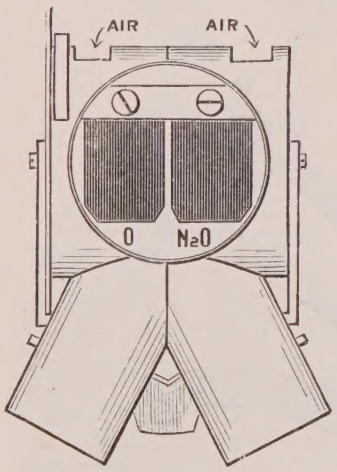
NOTE.—The union marked **O** on the *red* tubing is connected to the Oxygen cylinder, and the other union to the Nitrous Oxide cylinder.

Weller's Apparatus, as here illustrated, is the simplest that has yet been designed for the administration of Nitrous Oxide and Oxygen, either separately or in combination. There are no complicated parts about it, no tubes within tubes to give trouble, or valves in mounts liable

WELLER'S NITROUS OXIDE AND OXYGEN APPARATUS—*continued.*

to be sucked in and thus to deprive the anæsthetist of complete control of the gases.

The three-way stopcock is so designed that the valves can easily be inspected before use. This is effected by pulling off the front tube on which the expiratory valve **EV** is fixed. The removal of this tube exposes the inspiratory valves N_2O and **O**. When Air alone is given it is admitted through both these inspiratory valves, and it is always advisable to put them in action by giving Air before either Nitrous Oxide or a mixture of Nitrous Oxide and Oxygen is turned on.



Front view of Stopcock, which shows inspiratory valves **O** and N_2O exposed

Through the stopcock any quantity of Air or Nitrous Oxide can be given, or Nitrous Oxide with any proportion of Oxygen from 1 to 20 per cent., or pure Oxygen, by simply moving the handle **H** where required. When the pointer is fixed at Air the patient breathes only Air; when at N_2O, as shown in the illustration, Nitrous Oxide Gas; when at any of the figures below N_2O, Nitrous Oxide with a percentage of Oxygen—2, 3, 4 per cent., and so on up to 20 per cent.; and when at **O**, pure Oxygen.

The percentage of Oxygen is admitted through a narrow slot, which can be more readily cleaned than little holes such as have been heretofore adopted. No valves are required in the delivery tubes, as both the inspiratory valves are closed by exhalation and check both gases, consequently premature mixing cannot take place during exhalation.

DIRECTIONS FOR USE:

To prepare the Apparatus for use, put the several parts together, as shown in the illustration, attach the unions **U U** to the gas cylinders—the union on the *red* tubing to the Oxygen cylinder, and the union on the *black* tubing to the Nitrous Oxide cylinder—turn the handle **H** downwards until the pointer stands at Air, and proceed according to the instructions given on page 42.

	£	*s.*	*d.*
Apparatus complete as illustrated, with Black India-rubber Twin Bag	4	5	0
The same, with Black Silk Twin Bag	5	0	0

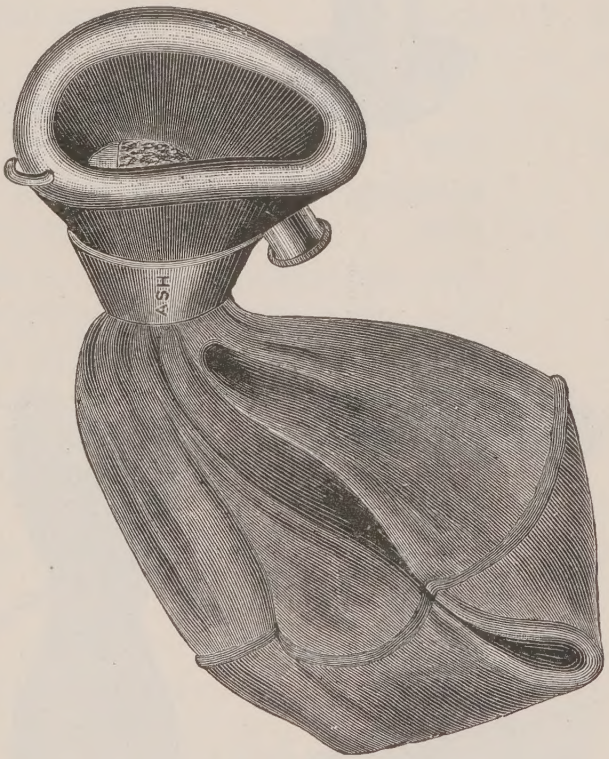
ORMSBY'S ETHER INHALER,

WITH LARGE BAG INTRODUCED BY MR. WOODHOUSE BRAINE.

For description of this Inhaler and its advantages see pages 86 to 88 of the second edition of

Underwood and Braine's Notes on Anæsthetics in Dental Surgery.

"It is an exceedingly useful one, very simple in construction, has no parts to get out of order, and is not liable to be damaged by a struggling patient. It consists of a Facepiece, to which is affixed a wire cage bearing an ordinary sponge, and of a respiratory bag drawn over the cage.



"Fitted on to the Facepiece is a brass cap, covering a funnel-shaped opening leading down to a lead tube, which bifurcates, enclosing the sponge. This tube is punctured with many openings, and is intended to facilitate the pouring on of ether without removing the Facepiece."

As here illustrated, it is provided with a Bag 12 inches in diameter, which is "quite large enough to hold an expiration without any distension of the bag."

"To use Inhaler, choose a good open sponge—one that can be breathed through easily—and place it in the cage loosely, entirely filling up the opening at the commencement of the cage. Then pour on ʒij. ether" (anhydrous ether, specific gravity 0·720), "and gradually apply to face. Very soon ether may be increased by another ʒij., and with care the patient can be anæsthetised as quickly and comfortably as with a Clover Inhaler, and remain a better colour throughout." . . . Moreover, "a stronger ether vapour can be obtained with it than with the Clover, and there are fewer after-effects when it has been used."

		s.	*d.*
Ormsby's Ether Inhaler, complete as illustrated		26	0
Extra Facepiece Pads, without Taps	each	3	9
Anhydrous Anæsthetic Ether (specific gravity 0·720) .	per pint	7	0

GAGS, OR MOUTH PROPS.

FIG. 1.

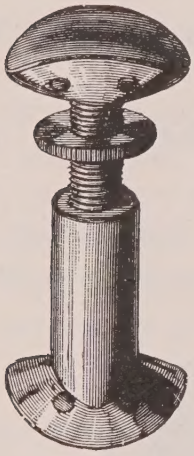


FIG. 2.

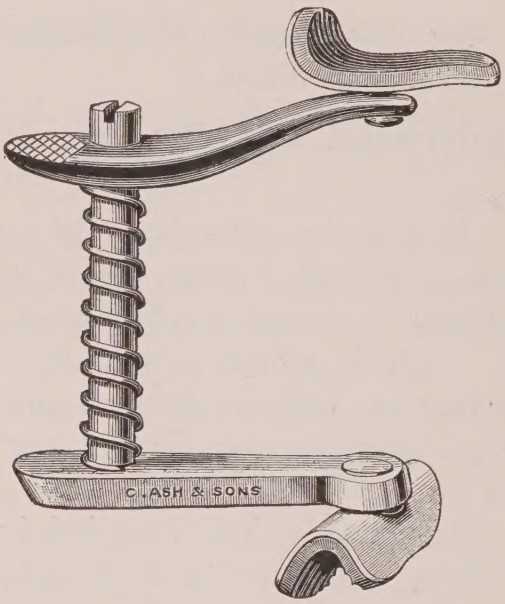


FIG. 8.

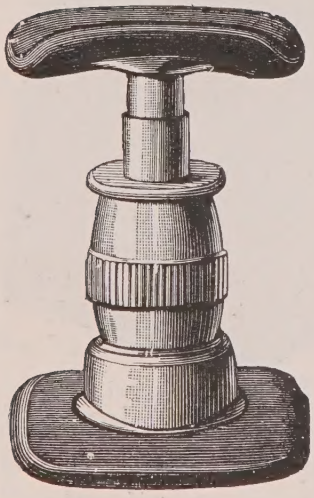


FIG. 9.

FIG. 10.

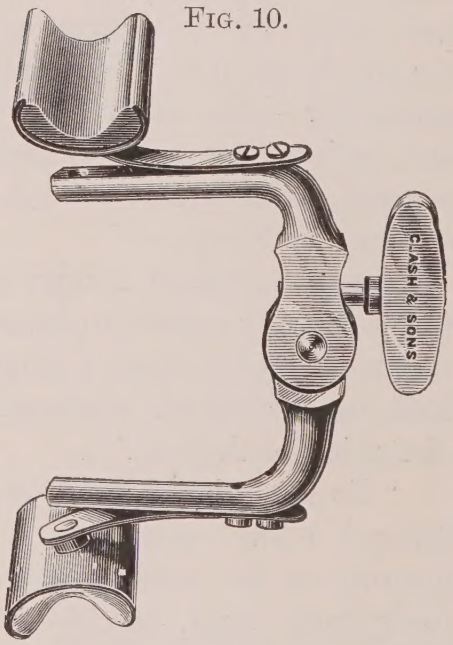


FIG. 11.

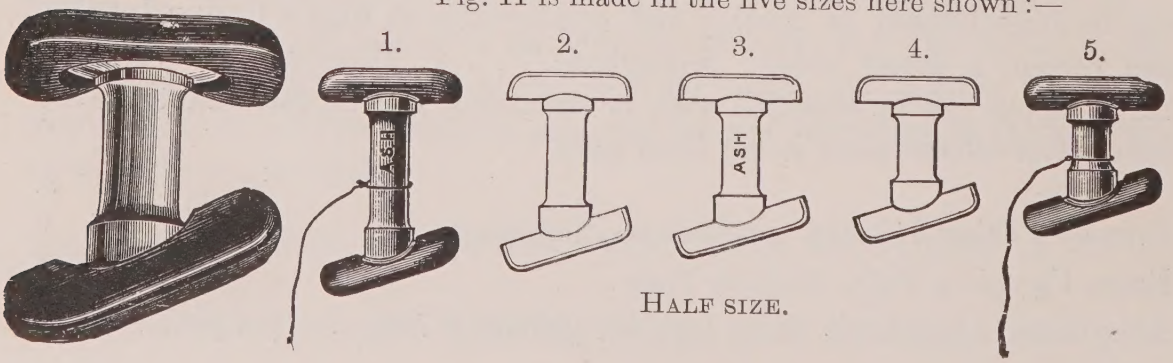


Fig. 11 is made in the five sizes here shown :—

HALF SIZE.

GAGS, OR MOUTH PROPS.

		s.	*d.*
Fig. 1.	Spring Gag in Steel, Nickel-plated, with gutta-percha pads and adjusting screw. Made in two lengths—long and short . . . . each	5	6
Fig. 2.	Hinged Gag (Mr. Brunton's) in Steel, Nickel-plated, with india-rubber pads on the plates and spring on rod each	10	6
	Modified form of Mr. Brunton's Gag, with straight arms and lead pads . . . . . each	6	6
Fig. 8.	Spring Gag (Mr. Buck's) in Steel, Nickel-plated, with adjusting screw, india-rubber pads and knuckle-joint. Made in two sizes—large and small . . . . each	7	6
	Extra Pads for ditto . . . . . per pair	0	4
Fig. 9.	Simple Gag in Vulcanite, with soft india-rubber pads. Made in three sizes—long, medium, and short . each	1	3
Fig. 10.	Adjustable Gag in Steel, Nickel-plated, with regulating thumb-screw and gutta-percha pads . . . each	14	0
Fig. 11.	—Fixed Gag (Dr. Hewitt's), made in Aluminium and Celluloid, in five lengths, known as sizes 1–5. Size 1 is $1\frac{3}{8}$ inches long in the centre, and sizes 2, 3, 4, 5 are respectively $1\frac{1}{4}$, $1\frac{1}{8}$, 1 and $\frac{7}{8}$ in. In Aluminium, any size, with lead pads . . . each	3	6
	In Aluminium or Celluloid, any size, with rubber pads each	3	0
	Extra India-rubber Pads, as shown on Fig. 11 per pair	0	4

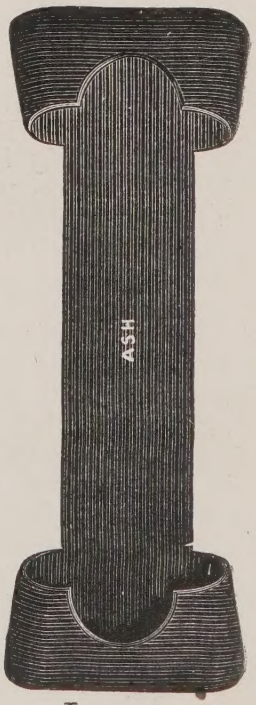
CONTINUOUS INDIA-RUBBER PADS

FOR DR. HEWITT'S GAGS.

SMALL.
K

Quickly applied, readily sterilised, and cheaply renewed. The large Pad is intended for Gags Nos. 1 and 2, and the small for Gags Nos. 3, 4 and 5.

	s.	*d.*
PRICE, either size . each	0	3

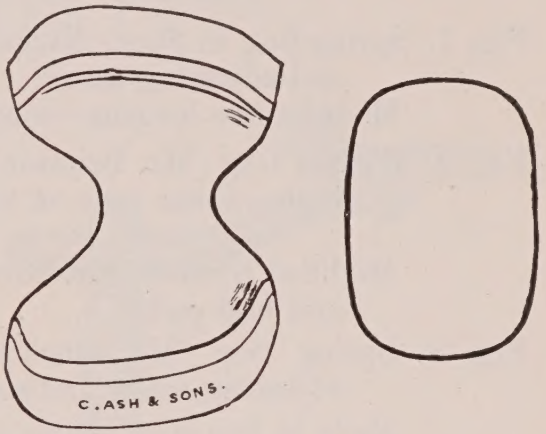


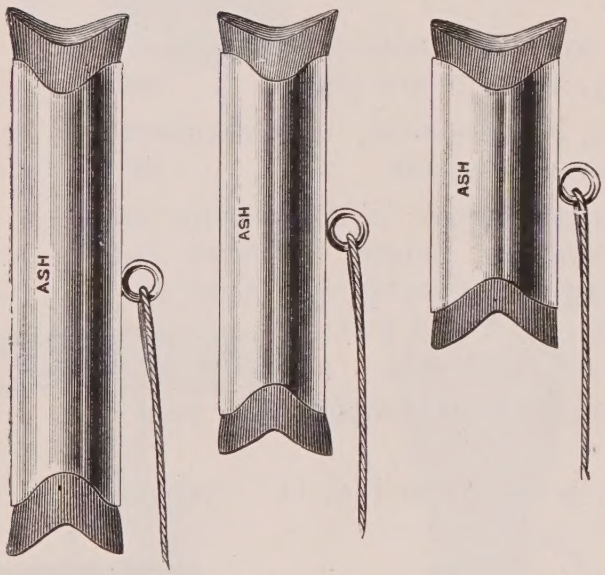
LARGE.
E

GAGS—*continued.*

Extra stout Vulcanite Gag, with soft rubber pads, rounded or square edges (Fig. 12) . each — *s.* 3 *d.* 0

FIG. 12.





LONG. MEDIUM. SHORT.

SIMPLE GAGS WITH CORK PADS.

(MR. LEE'S.)

Long, Medium, and Short each — *s.* 1 *d.* 0

Extra Cork Pads per 100 — *s.* 3 *d.* 0

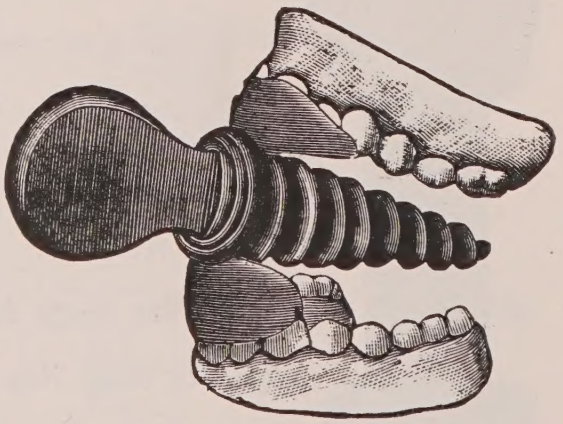
In ordering extra Cork Pads, please be careful to state whether they are required for the long and medium sizes or for the short size.

Metal Chains for Gags per foot — *s.* 1 *d.* 9

MAUNDER'S SCREW GAG.

For rapidly forcing open the mouth. Mr. Salter, on page 234 of his book on "Dental Surgery and Pathology," in speaking of this appliance, says: "Upon introducing the point" of the Gag "between the incisors or canines or præmolars, and slowly turning the instrument, it evenly and regularly progresses, separates the jaws, and, as I have thought, with quicker results than any other method."

In the illustration the Gag is shown in use in a case of partial closure, where the front teeth are protected by vulcanite plates; but such plates cannot, of course, be employed in cases of complete closure. The late Mr. Salter used the Gag without anything to protect the teeth.

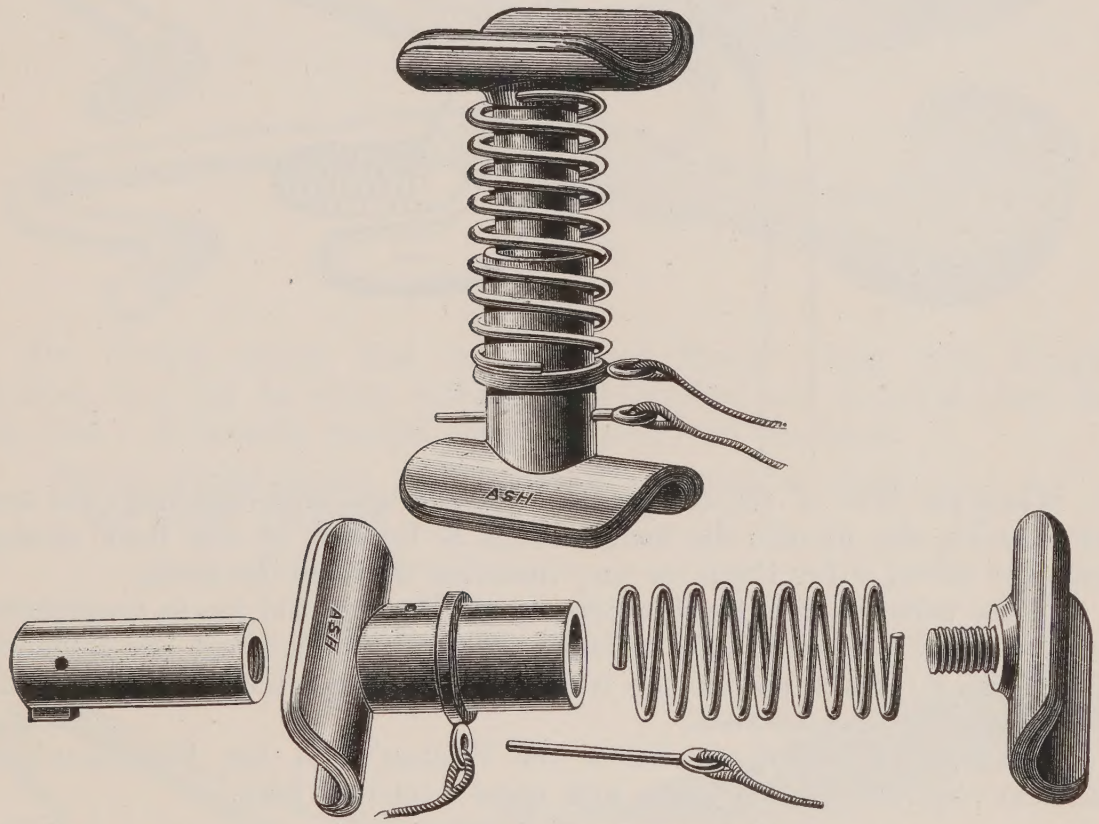


ABOUT HALF SIZE.

Made of Boxwood . . . . . — *s.* 2 *d.* 3

MR. G. H. J. ROGERS' ASEPTIC MOUTH PROP OR GAG.

(REGISTERED. REG. No. 456,387.)



Gag complete. The same taken to pieces for sterilising.

Mr. G. H. J. Rogers' Gag is a great advance upon existing Gags in that it can easily be taken to pieces, every part thoroughly cleansed, and put together again.

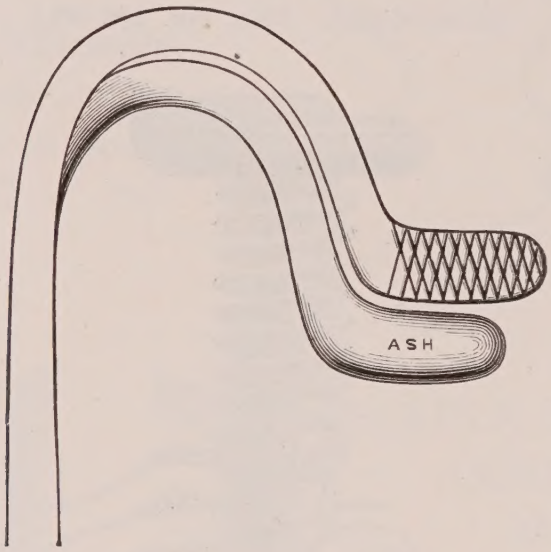
To take it apart it is only necessary to unscrew the top plate. In putting it together again the inside pillar should be pushed as far into the tube as it will go, and held there while the top plate is screwed into position ; this will save the need of undue pressure being exercised in pressing the spiral spring sufficiently for the plate to be screwed into the pillar. In applying the Gag the spiral spring should be compressed—it is shown fully extended in the illustrations—and held down by inserting the little pin in the holes in the tube and pillar. When the Gag is *in situ* the withdrawal of the pin will allow the spring to keep the plates as fully extended as the mouth will allow.

Made in two lengths, the long one being shown in the illustration heavily nickel-plated and fitted with lead pads.

	s	*d.*
PRICE, Long or Short . . . . . each	7	6

ADJUSTABLE GAGS,

WITH MR. W. R. ACKLAND'S IMPROVED JAWS.

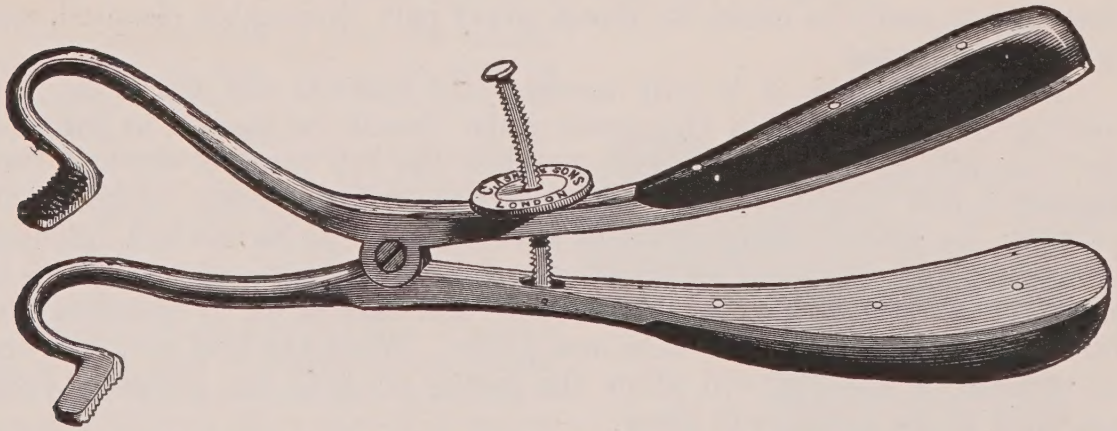


When the jaws of the old pattern Mason's and such-like Gags are used for opening the mouth, the wedge which is formed, by one beak closing upon the other, is too thick for easy insertion between the teeth.

In the valuable modification here shown Mr. Ackland has so constructed the jaws that they close side by side and form a wedge half the thickness of the old style and double the width—two points which will be warmly appreciated by Anæsthetists.

The Mason's Gag shown below, the Buxton's and the Fergusson's on the next page, are all now made with these improved jaws.

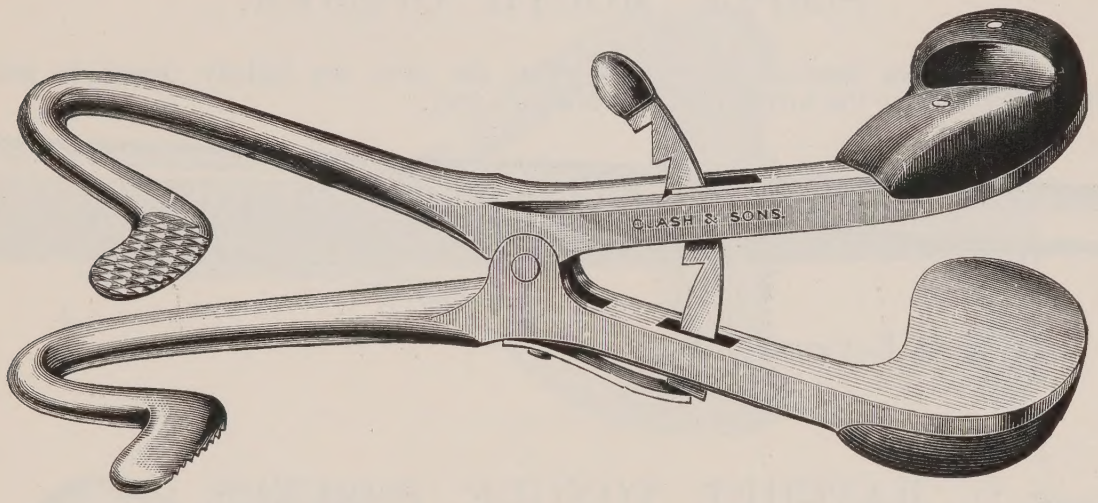
MASON'S GAG.



Made with long Ebony handles as illustrated, all bright parts Nickel-plated, and supplied with India-rubber pads for patients to bite upon.

		s.	*d.*
PRICE, with Long or Short Handles	each	16	6

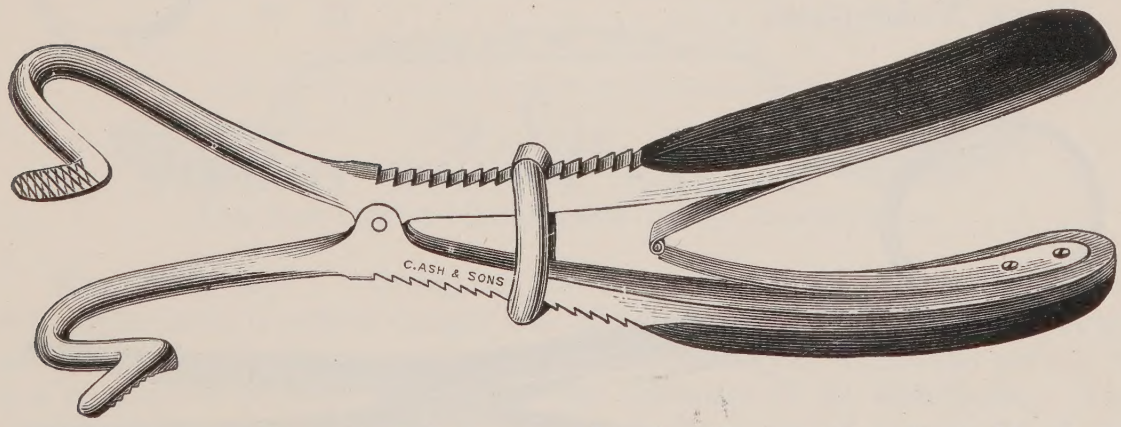
BUXTON'S GAG.



Dr. Buxton claims that this modified Mason's Gag, with Hinged Ratchet Bar, can be much more rapidly applied and removed than the old form. It is easily worked and controlled with one hand.

	s.	*d.*
PRICE, Nickel-plated, with Ackland's Improved Jaws and Ebony Handles	16	6

FERGUSSON'S GAG.



With powerful spring between the handles, and adjustable loop which holds the jaws of the instrument open at any desired point.

Owing to the great rapidity with which the Gag can be worked, it is much appreciated by Anæsthetists.

	s.	*d.*
PRICE, Nickel-plated, with Ackland's Improved Jaws and Ebony Handles	18	0

Mason's and Fergusson's Gags are also supplied in **All-Metal** handles to admit of thorough sterilisation by immersion in a suitable antiseptic fluid. They are of the highest quality, handsome in appearance, and heavily nickel-plated.

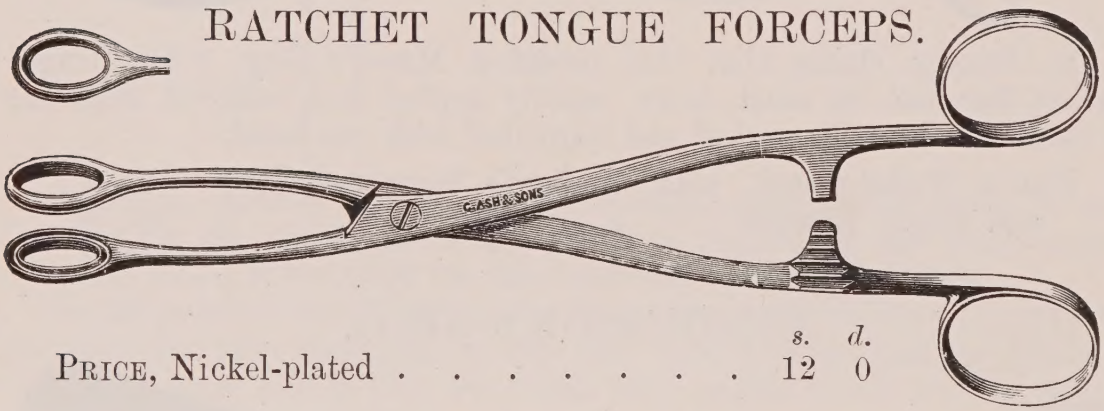
		s.	*d.*
PRICE	each	25	0

SIMPLE MOUTH OPENER.

For inserting between the teeth, when the jaws are tightly closed, to gain sufficient room for the introduction of Mason's Gag.

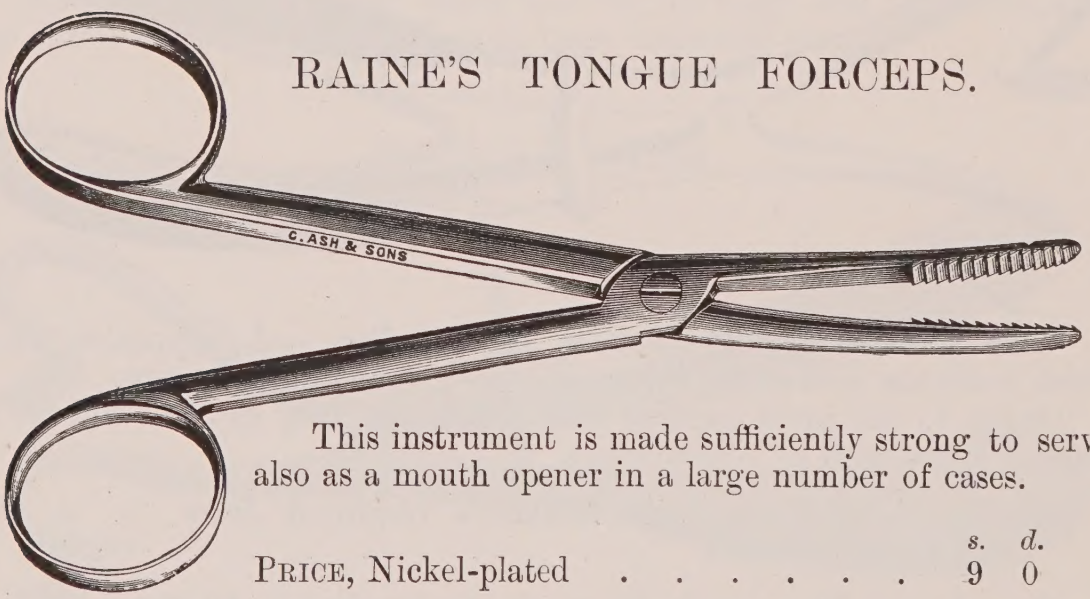
	s.	*d.*
PRICE, in Boxwood	0	6

RATCHET TONGUE FORCEPS.



	s.	*d.*
PRICE, Nickel-plated	12	0

RAINE'S TONGUE FORCEPS.

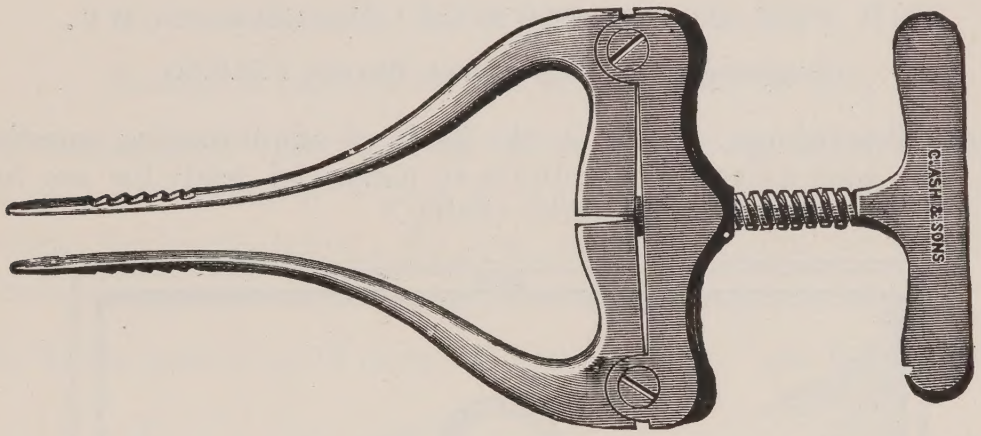


This instrument is made sufficiently strong to serve also as a mouth opener in a large number of cases.

	s.	*d.*
PRICE, Nickel-plated	9	0

"Should the breathing stop during the administration of Nitrous Oxide Gas, or any other anæsthetic, the forcible pulling forward of the tongue, and the administration of nitrite of amyl within a few seconds after unmistakable signs of something unusual in the breathing have appeared, will in almost every case remove the difficulty, and the slight puncture made by the forceps will probably assist the reflex stimulus."
—See Underwood and Braine's Notes on Anæsthetics. 2nd edition.

MOUTH OPENER.

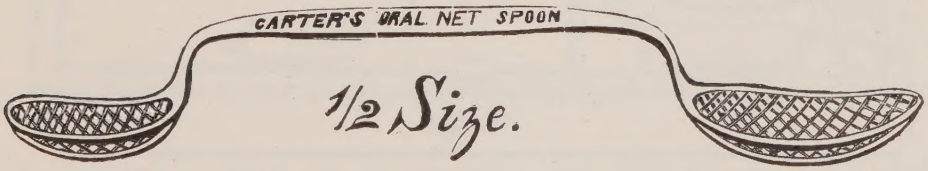


	s.	*d.*
In Steel, Nickel-plated	12	6

"It is usually advisable to introduce this instrument at some point where there is a tooth deficient, but should there be no gap, it is possible with care to insinuate the thin blades between closed teeth."—**See Underwood's Notes on Anæsthetics.**

CARTER'S ORAL NET SPOON.

(With Improvement suggested by Dr. DUDLEY W. BUXTON.)



For Use during Extractions under Anæsthetics.

Mr. Carter says: "Owing to the increasing use of Anæsthetics for dental purposes, a serious danger has arisen, viz., that of a tooth or stump escaping from the forceps and passing into the larynx when the patient is in a recumbent position and under the influence of an anæsthetic. The position favours its falling backwards, and the loosened sensibility of the glottis, added to the rush of the current of air during an inspiration, renders the patient particularly liable to the occurrence of an accident of this kind.

"By the use of this instrument, not only may an obvious danger be avoided, but a great source of anxiety is removed from the mind of the operator."

To prevent all fear of a bowl being broken off while the spoon is in the patient's mouth, Dr. Dudley Buxton has had the handle carried underneath the gauze at both ends. He claims that it thus lends support to the frame of each bowl, and makes the spoon more serviceable.

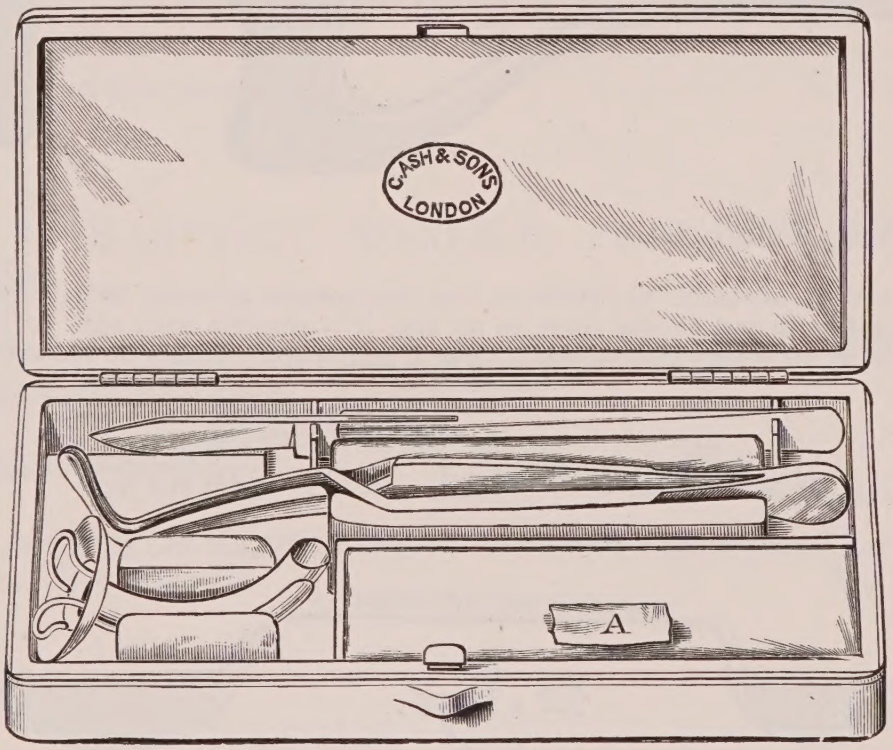
	s.	*d.*
Price	6	6

EMERGENCY CASE,

FOR THE OPERATION OF TRACHEOTOMY.

(Suggested by Mr. WOODHOUSE BRAINE, F.R.C.S.)

Every Practitioner who is in the habit of administering anæsthetics should have such a Case as this always at hand, and ready for use in the event of any untoward circumstance arising.*



The Case contains :—

1 Ivory-handled Scalpel,
1 Dilating Forceps,
1 Silver Tracheotomy Tube, and
A space, marked A, for holding a supply of Nitrite of Amyl.

	s.	*d.*
Price, in leather, complete with Instruments .	**28**	**0**

For Nitrite of Amyl, see next page.

Emergency Cases to hold the above Instruments, etc., and other needful appliances, made to order.

---

* A very interesting account, illustrative of the value of an Emergency Case, of an operation performed by Dr. F. W. Hewitt is recorded in the April, 1888, number of *The Journal of the British Dental Association.* The paper is entitled: "A case of Laryngeal Spasm under Nitrous Oxide in a Patient with old-standing Arthritis of the Lower Jaw, Cervical Vertebræ, and other parts; Laryngotomy; Remarks." The operation was so successful that "the wound completely healed in a week's time, and the patient made an excellent and uninterrupted recovery."

NITRITE OF AMYL CAPSULES.

(As recommended by Mr. WOODHOUSE BRAINE.)

Encased in cotton-wool and silk, 3 minims in each.

Mr. Braine says: "Should much pallor be present, or syncope appear imminent, a few whiffs of Nitrite of Amyl furnish the quickest means of reaching the heart's action; the most convenient form for carrying it is in little glass capsules."

		s.	*d.*
In Boxes containing 12 capsules	per box	2	6

AMYL NITRITE PALATINOIDS.

Each containing 3 minims in a Jujube Cachet, from which the contents may be easily squeezed upon a handkerchief for inhalation.

Supplied in stoppered bottles of thirty.

		s.	*d.*
PRICE	per bottle	2	0

WOODEN CASES FOR GAS CYLINDERS.

These Cases are made of stout deal, iron hooped, and with reversible lids, which are secured in position with bolts and nuts. They are intended for the conveyance of Nitrous Oxide Gas Cylinders by Rail, etc., and will stand rough usage.

One side of the lid is reserved for the name and address of the Dentist and the other for our own, so that all that need be done—say, when an empty cylinder is to be returned to us—is to turn over the lid, fasten it with the nuts, and the case is ready for forwarding. The trouble of writing and affixing a label each time is thus saved; the case can be sent to and fro a great many times before it is worn out, and the lid always bears the name and address of the owner, so that there can never be any doubt where it comes from.

We can speak from experience of their durability.

	s.	*d.*
Case to hold one 50-gallon cylinder	2	6
,, ,, two ,, ...	3	0
,, ,, one 100 ,, ...	3	0
,, ,, two ,, ...	3	6

For Hemp Bags, see page 13.

THE PERFECT MASK.

(*PATENTED.*)

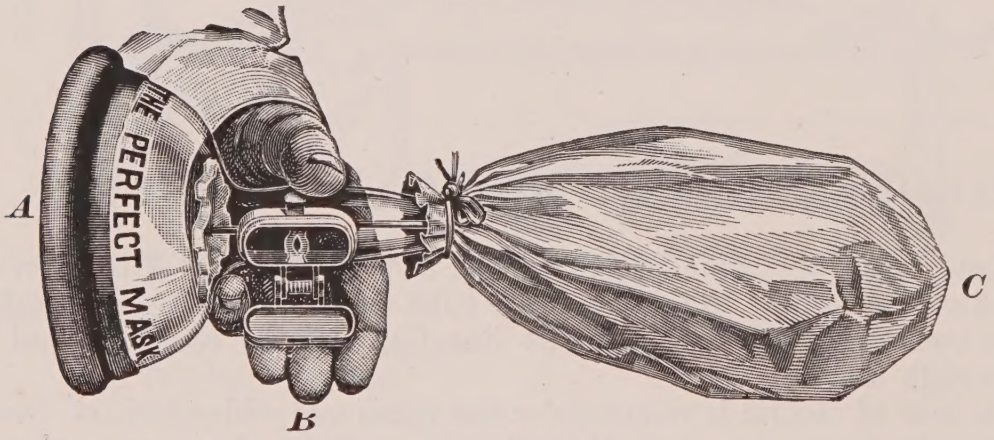
(Designed by FIELD ROBINSON, D.D.S., Univ. of Penn.)

Aseptic, Transparent, Simple in Construction, Readily Sterilised, Reliable, Economical, and Insoluble to Anæsthetics of the Ethyl-Methyl Class.

SUITABLE FOR USE IN ADMINISTERING

Somnoform, Ether, Ethyl Chloride, Chloroform, Ethyl-Methyl Mixtures, also **Nitrous Oxide Gas,** and **Nitrous Oxide and Oxygen in combination.**

FIG. 1.



Mask complete, with door of metal chamber open. ***A***—Pneumatic India-rubber pad—commonly known as Facepiece pad. ***B***—Metal chamber on side of glass frame. ***C***—Sterilised bladder. (If preferred, an India-rubber bag can be used instead.)

GENERAL DIRECTIONS FOR USE:

Somnoform, Ethyl Chloride, Ethyl-Methyl Mixtures.

Preparation of the Mask.—(1) Take five or six of the aseptic lint pads, fix them on the metal frame and secure in position by screwing up the screw mount on the small end of the glass frame. (2) Put the pneumatic India-rubber pad over the border of the glass frame and inflate it. (3) Attach to the small end of the glass frame either a sterilised bladder or an India-rubber bag.

ROBINSON'S PERFECT MASK—*continued.*

Directions for Use—*continued.*

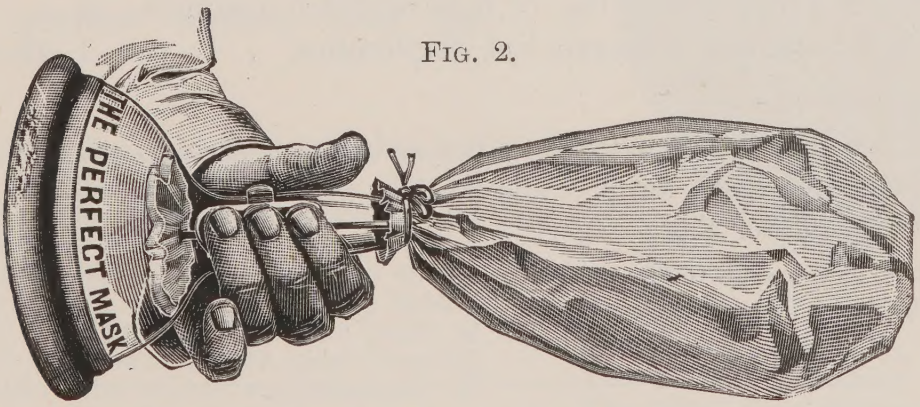
Application.—Take the Mask in the left hand in such a way that it rests in the palm, with the spring of the metal chamber immediately under the thumb, and use three fingers, as shown in illustration Fig. 1, for controlling the door.

When the ordinary bottle or tube is used, direct the jet of Somnoform, Ethyl Chloride, or Ethyl-Methyl mixture towards the bladder or India-rubber bag.

When a sealed tube is used it should be nicked at the place required, previous to breaking, either with a fine triangular file or with a thin disc, broken in the loop within the metal chamber, and the contents directed towards the bladder or India-rubber bag; or it may be broken without nicking by striking the neck of the tube against the internal sides of the Mask.

The door is then closed with the fingers and kept securely in place with the spring.

Fig. 2.



Mask complete with metal chamber closed. The wire frame inside the face-part, which holds the aseptic lint pads, with stem by which it is secured to the small end, can be clearly seen in this illustration.

Ether.—The method of application described above is used for giving Ether.

Chloroform.—No bladder or India-rubber bag is used for Chloroform; the drug is simply poured drop by drop on the lint pads, either through the metal chamber or down the small open end of the Mask.

Nitrous Oxide, and Nitrous Oxide and Oxygen.—The Three-way valved Stopcock is connected with The Perfect Mask by simply sliding it on to the mount of the Mask.

ROBINSON'S PERFECT MASK—*continued.*

The general opinion of the **Perfect Mask,** independently of its aseptic and practical value, is that with a dose of 3 cubic centimetres anæsthesia can be more quickly produced and is of longer duration when the Mask is used, than can be obtained with a larger dose when the simple handkerchief cone is used.

The manipulation of the **Perfect Mask** is as easy and simple as can be desired.

The following average results were obtained with the **Perfect Mask** and Somnoform in nearly five hundred administrations to patients of private practitioners and those who attended Dr. Rolland's clinic, all the cases being timed with a stop-watch, and duly certified either by the medical men who assisted at the operations, or by demonstrators, or by independent and impartial spectators :—

Average dose of Somnoform, 3 to 5 cubic centimetres.
Average time of producing anæsthesia, 30 seconds.
Average duration of anæsthesia, 78 seconds.

	£	*s.*	*d.*
Perfect Mask, complete in box with two facepiece pads, one India-rubber bag or four sterilised bladders, and one box of aseptic lint diaphragms . . .	1	12	6
Separately :—			
Glass Mask with metal chamber and wire frame .	0	16	0
Facepiece Pads, large or small . . . . each	0	6	0
India-rubber Bag	0	4	0
Sterilised Bladders . . . . . per set of 4	0	3	3
Aseptic Lint Diaphragms. . . . . per box	0	0	10

SOMNOFORM,

FOR GENERAL ANÆSTHESIA.

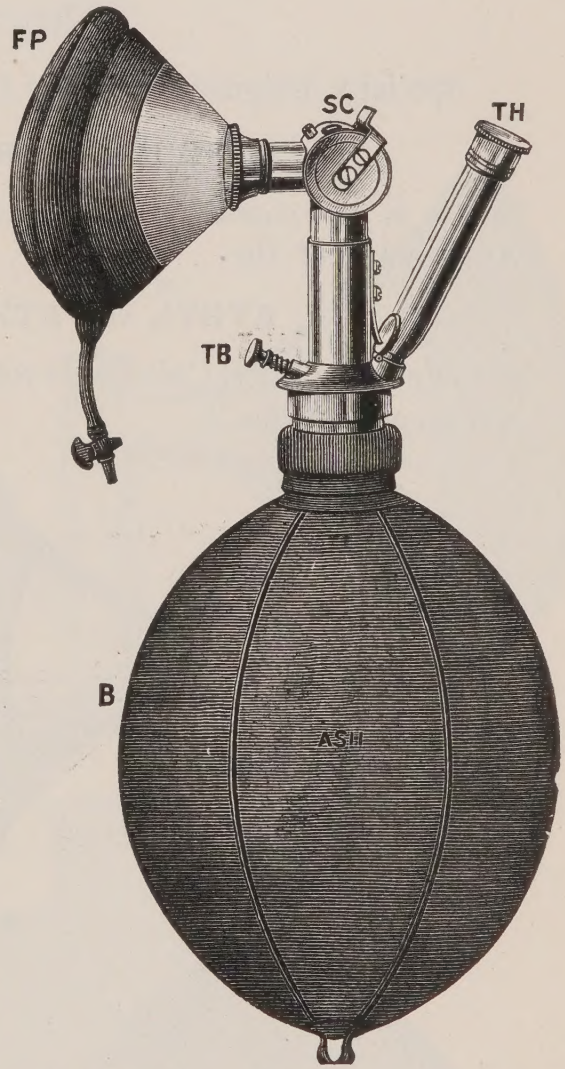
	s.	*d.*
In boxes of six sealed tubes, containing 3 cubic centimetres . . . . . per box	3	6
In boxes of six sealed tubes, containing 5 cubic centimetres . . . . . per box	3	6
In boxes of twelve sealed tubes, containing either 3 or 5 cubic centimetres. . . . . per box	5	9
In bottles containing 60 cubic centimetres . per bottle	5	0
Valve stopper for bottles	5	0

ETHYL CHLORIDE INHALER.

(Mr. A. McFarlane's.)

(*Registered. Reg. No.* 456,388.)

Mr. McFarlane's Inhaler possesses all the advantages of other Inhalers in which a sealed glass tube can be broken inside the metal mount, but in addition it is provided with a Two-way Stopcock, which admits of the Ethyl Chloride vapour being kept in the Bag until it is required for use, either after a sealed glass tube has been broken or the Ethyl Chloride has been sprayed from a large tube into the Retainer. Further, with the Two-way Stopcock, any quantity of the vapour, from a very small to a full volume, can be admitted to the Facepiece at will, or it can be cut off entirely and air admitted instead, if desired. It thus gives the administrator perfect control over the Anæsthetic.



FP—Facepiece.
SC—Two-way Stopcock.
TH—Glass Tube Holder.
TB—Glass Tube Breaker.
B—India-rubber Bag.

TH *is not used when the Ethyl Chloride is sprayed into the Retainer from a large graduated tube.*

In bringing it to the notice of the Metropolitan Branch of the British Dental Association, Mr. E. Thorne claimed that "It is simple and easy of manipulation, demands no hurry, and creates no waste. It consists of a metal retainer, 1½ inches diameter, 2 inches deep, with wire gauze at each end to prevent broken glass entering the mouth or the rubber bag attached. It can be used for either cartridge or spray tubes, by means of a metal holder, taking any of the ethyl chloride or somnoform cartridges now in use. It has an automatically closing lid to aperture for inserting ethyl chloride, and a crushing device for breaking the tube after insertion. A two-way stopcock controls the vapour (which is quite enclosed), permitting at will a start to be made with the smallest possible quantity, gradually adding to it as required, without help or removal of the facepiece. It gives the patient confidence by permitting free breathing, securing good inspiration before turning on the stopcock. A disc of blotting paper, folded and placed in the retainer, holds ethyl chloride in suspension, which is thus more evenly distributed with each expiration."—*British Dental Journal.*

	£	*s.*	*d.*
Inhaler complete as illustrated, including Facepiece, Two-way Stopcock, Glass Tube Holder, and India-rubber Bag	2	5	0

LOBJOIS' No. 1 INHALER.

(*PATENTED.*)

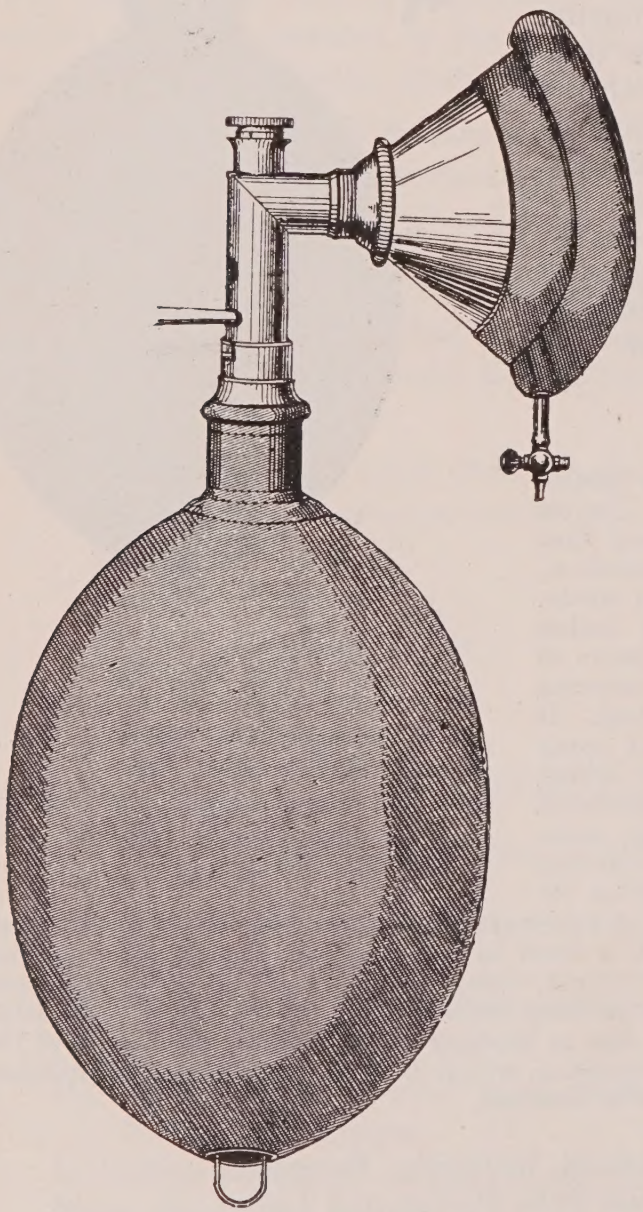
Specially designed for taking the sealed tubes of

BENGUÉ'S PURE ETHYL CHLORIDE,

but it is also equally well adapted for use in administering any of the Anæsthetics of the

ETHYL OR ETHYL-METHYL CLASS,

although only Ethyl Chloride is referred to in the description of the Inhaler and its advantages.



Lobjois' No. 1 Inhaler.

This illustration shows the Inhaler complete, ready for use.

For description of the several parts, see next page.

ADVANTAGES:

1. It holds the bulb of Ethyl Chloride containing the dose necessary for producing anæsthesia.
2. Additional Ethyl Chloride can be applied, if required, during the administration, without removing the Facepiece.
3. Air can be given and regulated according to the needs of the patient by means of the Air Valve **D**.
4. The Ethyl Chloride is so securely confined within the cage **F** that when the Facepiece is applied there is no waste, and all the Anæsthetic vapour is freely inhaled by the patient without discomfort or sense of suffocation.
5. The Inhaler is extremely portable.
6. It is simple in construction, and all its parts can be readily sterilised.
7. It is thoroughly well made, and moderate in price.

LOBJOIS' No. 1 INHALER—*continued.*

DESCRIPTION:

A—Bulb of Ethyl Chloride, containing 5 cubic centimetres, fixed in mount.

B—Shows where the glass point is broken off.

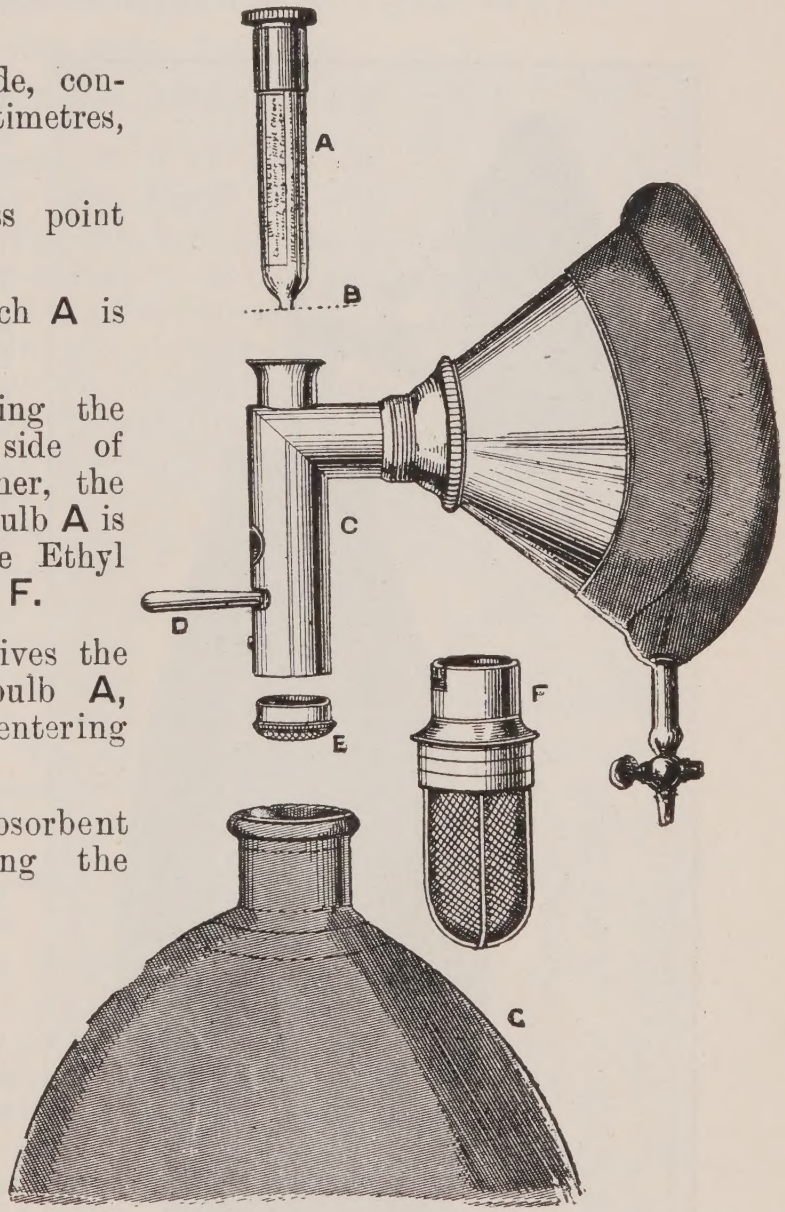
C—Metal Tube down which **A** is passed.

D—Air Valve. By moving the handle from one side of the slot to the other, the glass point of the bulb **A** is broken off and the Ethyl Chloride enters cage **F.**

E—Gauze Cup which receives the broken point of bulb **A,** and prevents it entering cage **F.**

F—Cage filled with absorbent material for holding the Ethyl Chloride.

G—India-rubber Bag. This can readily be detached from **F,** and washed out with an antiseptic after each administration.



	s.	*d.*
Lobjois' No 1 Inhaler, complete in Card Box .	**25**	**0**

The Inhaler is also made to take the 3-c.c. or 5-c.c. sealed Tubes of Somnoform.

BENGUÉ'S ETHYL CHLORIDE.

	s.	*d.*
In boxes of 12 sealed glass tubes, containing 3 c.c. per box	4	6
„ „ „ „ 5 c.c. „	5	6

Circular on Ethyl Chloride, its physiological action, mode of administration, depth of anæsthesia, and with directions for using Lobjois' Inhaler, sent on application.

THE "SIMPLEX" INHALER

FOR ETHYL CHLORIDE.

This Inhaler (suggested by Dr. T. D. Luke, Anæsthetist to the Royal Infirmary, Edinburgh, and described by him in *The Lancet* of 18th July, 1903) has been registered with Dr. Luke's permission, and is a most satisfactory Inhaler for Ethyl Chloride. Its great advantage is its simplicity; there is really nothing to get out of order. In addition to this, the Inhaler can be at any moment adapted to the Ether Chamber of a Clover's Inhaler and the Ethyl Chloride-Ether sequence can be used.

Instructions for Use:

Inflate the face pad, but not too tightly.

Having first removed the plug, insert the nozzle of the stopcock directly into the supply tube of the Inhaler.

Press the spring tap, which will at once allow the anæsthetic to be discharged into the bag of the Inhaler.

The exact dose can be easily measured by watching the level of the liquid against the graduated measure on the side of the cylinder.

Replace the plug, and immediately proceed to give the anæsthetic.

To use the 3 or 5-c.c. Glass Capsules.

Hold the capsule vertically, and snip off the top of the neck. **Invert the Inhaler** and place the neck of the capsule in the little tube from which the plug has been removed. Quickly turn over the Inhaler, when the contents of the capsule will instantly enter the bag. Replace the plug before proceeding to anæsthetise.

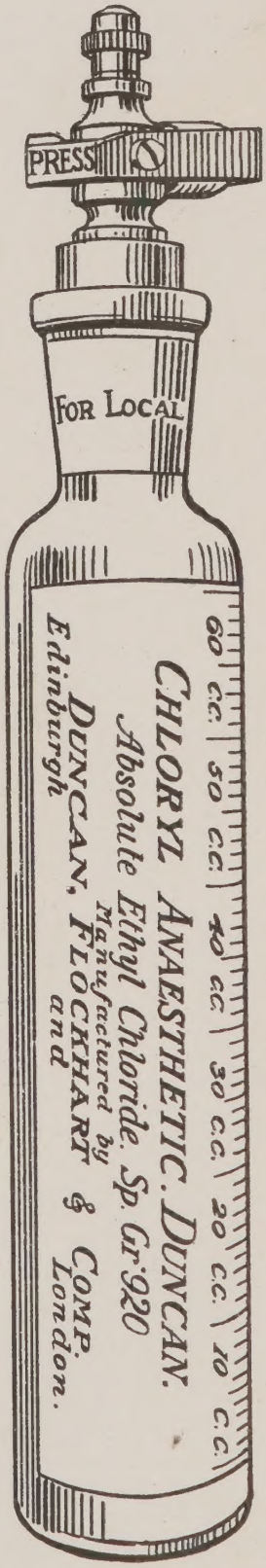
PRICE:

	£	*s.*	*d.*
Inhaler, with Celluloid Facepiece, Nickel-plated Mounts, and fitted with wide-mouthed Reversible Bag of superior quality	**1**	**12**	**0**
If fitted with Nickel-plated Gas Tap instead of Boxwood Plug, extra	**0**	**2**	**0**

DUNCAN, FLOCKHART & CO.'S AUTOMATIC CYLINDER FOR CHLORYL ANÆSTHETIC

(Absolute Ethyl Chloride).

FOR GENERAL ANÆSTHESIA.


PRESS
FOR LOCAL
60 c.c. | 50 c.c. | 40 c.c. | 30 c.c. | 20 c.c. | 10 c.c.
CHLORYL ANÆSTHETIC. DUNCAN.
Absolute Ethyl Chloride. Sp. Gr. 920
Manufactured by
DUNCAN, FLOCKHART & COMP.
Edinburgh and London.

To obtain complete success, it is of vital importance that an absolutely pure Ethyl Chloride should be employed. Otherwise disconcerting results may follow, involving disappointment to the Operator, chagrin to the Anæsthetist, and great discomfort to the patient. This cannot be too strongly insisted upon. As long as any trace of impurity remains uneliminated, the drug cannot be relied upon to do its work efficiently. With an absolutely pure Ethyl Chloride, the Anæsthetist may approach his task with an easy mind and with the most perfect confidence of producing a rapidly successful result.

Duncan's Chloryl Anæsthetic fulfils all the requisite conditions of an ideally perfect drug. It is *absolute* Ethyl Chloride free from Hydrochloric Acid, empyreumatic bodies, and ethers. It has a distinctly pleasant ethereal odour, in this important respect differing considerably from some other brands, and its vapour is not irritating to the eyes.

Extract from "The Lancet," June 18th, 1904.

"Chloryl Anæsthetic, Duncan.—The sample submitted to us gave physical constants consistent with the statement that it is absolutely pure ethyl chloride. There was no residue on evaporation, nor was any smell developed other than the fragrant chloroform-like smell of the pure chloride.

"The cylinder is provided with a stopcock, by which any desired quantity of the anæsthetic can be discharged by gentle pressure with one finger. Ethyl chloride may thus be easily administered, and the anæsthesia kept under control."

	s.	*d.*
60-c.c. Cylinder	3	1
Refilling	3	0
Patent Stopcock (general)	1	3
„ „ (local)	1	6
In boxes of 12 sealed glass tubes, containing 3 c.c. . . . . per box	5	0
„ „ „ „ 5 c.c. „	6	0

Ask for a copy of "Brief Notes on Ethyl Chloride as a General Anæsthetic."

KÉLÈNE

(PURE ETHYL CHLORIDE).

(Manufactured by La Société Chimique des Usines du Rhône.)

Although the purified form of Ethyl Chloride known as **"Kélène"** has not been in existence much more than ten years, it has secured a record amongst competent authorities unapproached by any other anæsthetic.

This result is mainly due to the specific qualities and to the purity of the anæsthetic, but is also largely the outcome of an intelligent conformity with the laws which govern the administration of anæsthetics.

As it is not possible in a limited space to give extracts from the present extensive literature on the subject, the practitioner can be referred to *The Ophthalmoscope* for April, 1904, in which Dr. S. Stephenson states the advantages which Ethyl Chloride (**Kélène**) has over all the older anæsthetics.

Dr. J. H. Chaldecott, writing in the same publication, emphasises the rapidity with which anæsthesia is produced with this agent, and the reader's notice may be drawn to some useful hints on the administration of Ethyl Chloride (**Kélène**) by R. J. P.-W. in the *London Hospital Gazette* for July, 1904.

The Honorary Surgeon to the Huddersfield Infirmary, Dr. Norman Porritt, has contributed a similar paper to the *British Medical Journal* of July 9, 1904.

In 1904 His Majesty's Anæsthetist, **Dr. F. W. Hewitt,** made exhaustive comparative trials with ethyl chloride, methyl oxide, and somnoform, and his extremely valuable conclusions were published in the *Lancet* of November 19 and 26.

KÉLÈNE AS A GENERAL ANÆSTHETIC IN DENTAL SURGERY—*continued.*

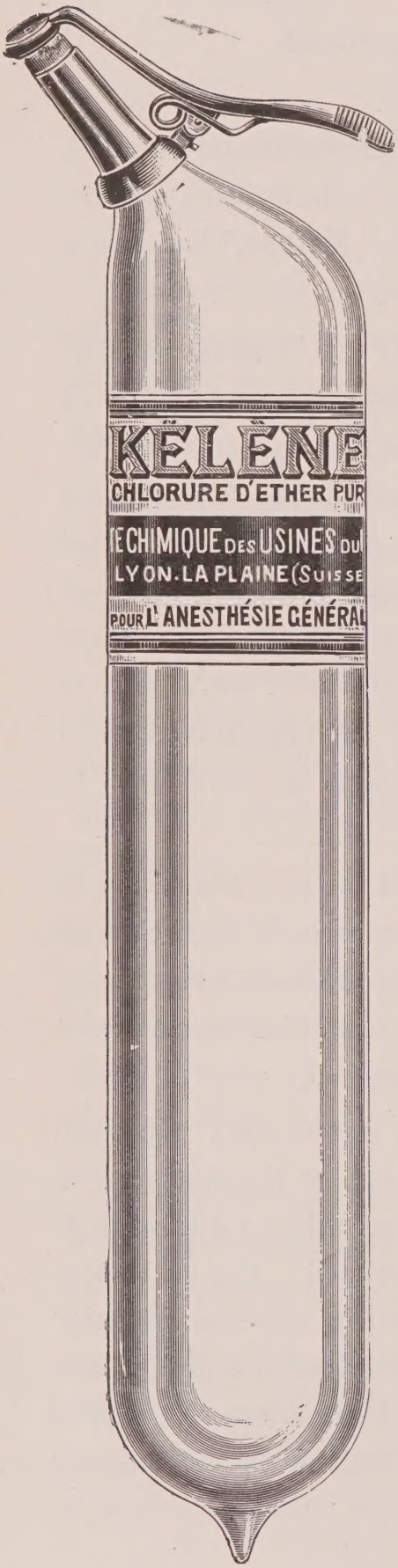
For his purpose Dr. Hewitt selected from the many makes of so-called "pure" ethyl chloride the anæsthetic manufactured by the Société Chimique des Usines du Rhône, which, under the name of "**Kélène,**" has now a world-wide reputation.

Of its fitness for dental work our author says: "In hospital practice, and especially in dental and throat operations, there was something to be said in favour of ethyl chloride as opposed to nitrous oxide. Certainly, from some points of view, the anæsthesia obtained by the former agent was of a better type than that obtained from the latter. In dental surgery, for example, the available anæsthesia period, after a full dose of ethyl chloride, was distinctly longer than that from nitrous oxide. Moreover, the great portability of the ethyl chloride tubes was a distinct advantage, especially in country practice, whilst the apparatus required and the method of administration were as simple as could well be wished."

Dr. Hewitt states that Dr. A. Moritz, who was for some time attached to the Royal Dental Hospital, successfully used a mixture of ethyl chloride and nitrous oxide in over 3,000 cases, and that in alcoholic and neurotic subjects a much better result was often obtained than with nitrous oxide alone.

In his concluding paragraph on **Kélène** Dr. Hewitt says: "In small children who are about to undergo some brief dental or throat operation, and in those adults who are bad subjects for nitrous oxide or nitrous oxide and oxygen, ethyl chloride will generally answer well. The continuous administration, without re-breathing, of percentage mixtures of ethyl chloride and air does not produce the best type of anæsthesia. The best results are obtainable by means of the apparatus which allows of a gradual addition of ethyl chloride vapour to a known volume of air breathed backwards and forwards."

KÉLÈNE: PURE ETHYL CHLORIDE.



60-GRAMME SIZE.

DIRECTIONS FOR USE

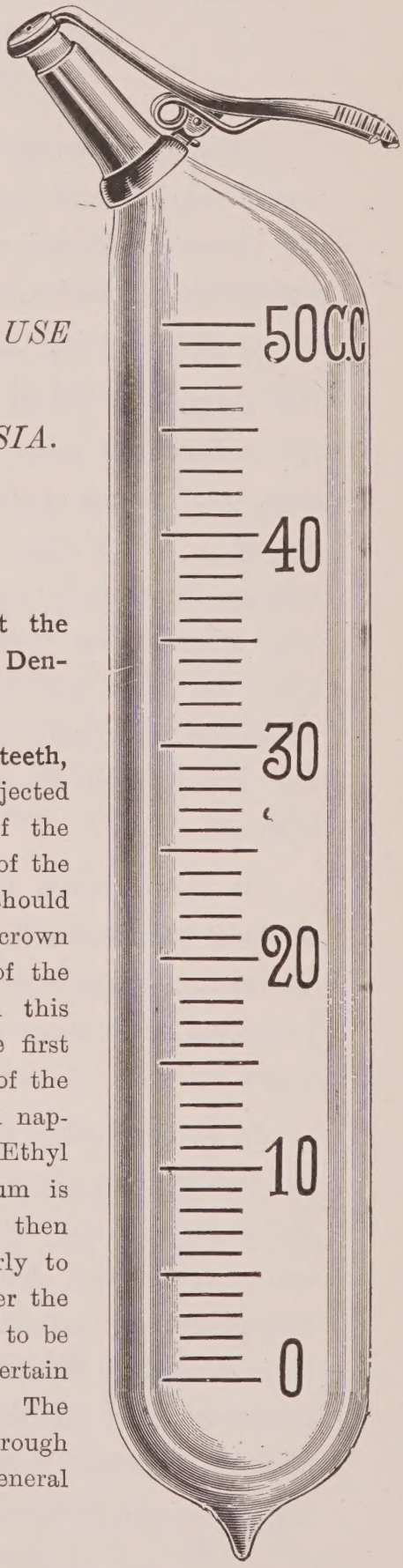
FOR

LOCAL ANÆSTHESIA.

Dr. C. REDARD,

Clinical Professor at the Geneva School of Dentistry, says:

"For the extraction of teeth, the liquid should be projected directly on the surface of the gum, as near to the apex of the root as possible, but care should be taken to protect the crown of the tooth on account of the painful action of cold on this part. The gum should be first dried, the crown and neck of the tooth protected by a small napkin, and the Chloride of Ethyl then applied until the gum is bleached. Anæsthesia is then complete. It is particularly to be observed that the farther the tube is held from the spot to be anæsthetized, the more certain and prompt is the effect. The patient should breathe through the nose, otherwise general anæsthesia might result."



60-GRAMME SIZE.

KÉLÈNE: PURE ETHYL CHLORIDE—*continued.*

A most reliable **Local Anæsthetic** for Dental Extractions and for Operations in Minor Surgery. It is used by thousands of operators with much satisfaction.

Supplied in Glass Tubes with Automatic-Closing Caps, as illustrated on previous page.

The **Automatic Cap** saves time and waste, the Tube is always ready for instant use, it requires but little attention from the operator when anæsthesia is reached, and may be laid down at once without fear of the Kélène escaping if the spring is firmly closed.

PRICES, with straight or Curved Nozzles:

		s.	d.
60-gramme size in box	per tube	4	0
Refilling same	„	3	0
30-gramme size, 3 tubes in box	per box	7	6
30 „ „ 1 tube in box	per tube	3	0
10 „ „ 10 tubes in box	per box	14	0
10 „ „ 1 tube in box	per tube	1	6

The 10-gramme size tubes cannot be refilled.

KÉLÈNE: PURE ETHYL CHLORIDE.

FOR GENERAL ANÆSTHESIA.

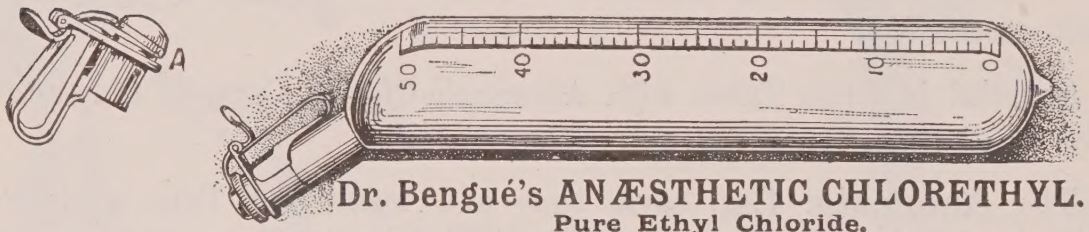
In glass tubes, graduated in cubic centimetres, 0 to 50. These tubes have larger openings and consequently give a fuller spray than the tubes for local anæsthesia illustrated on the previous page.

		s.	d.
60-gramme size **graduated** tube, with Curved Nozzle	per tube	4	3
Refilling same	„	3	0
In boxes of 12 sealed glass tubes, containing 3 c.c.	per box	4	6
„ „ „ „ 5 c.c.	„	5	6

Descriptive Circular on application.

BENGUÉ'S PURE ETHYL CHLORIDE.

FOR GENERAL ANÆSTHESIA.



Interchangeable Valve **A** and Graduated Tube.

	s.	*d.*
Tube containing 50 c.c., with Screw Cap	2	6
„ „ „ with Valve Stopper	3	9
Box of 3 Tubes	7	6

Also in

Sealed glass tubes, as under, for use with Lobjois' Inhalers:

	s.	*d.*
Box containing 12 Tubes, 3 c.c.	4	6
„ „ „ 5 c.c.	5	6

BENGUÉ'S PURE ETHYL CHLORIDE.

FOR LOCAL ANÆSTHESIA.

		s.	*d.*
Glass Tubes, 30-gramme size, with Screw Caps . . .	per tube	2	6
„ „ „ . .	per box of 3	6	9

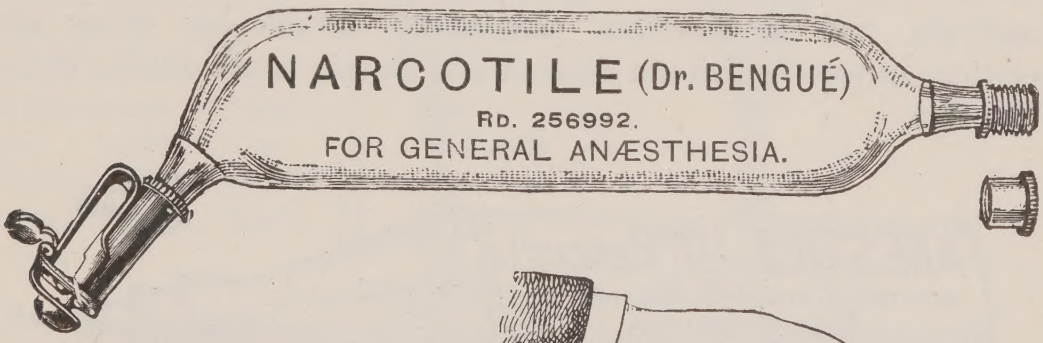
(These Tubes cannot be refilled.)

Glass Tube, 60-gramme size, with Automatic Cap	4	0
Refilling same	3	0
Metal Cylinder, 50-gramme size, with Valve Stopper	4	0
Refilling same	2	9
Metal Cylinder, 100-gramme size, with Valve Stopper	6	9
Refilling same	5	6

BENGUÉ'S NARCOTILE

FOR GENERAL ANÆSTHESIA.

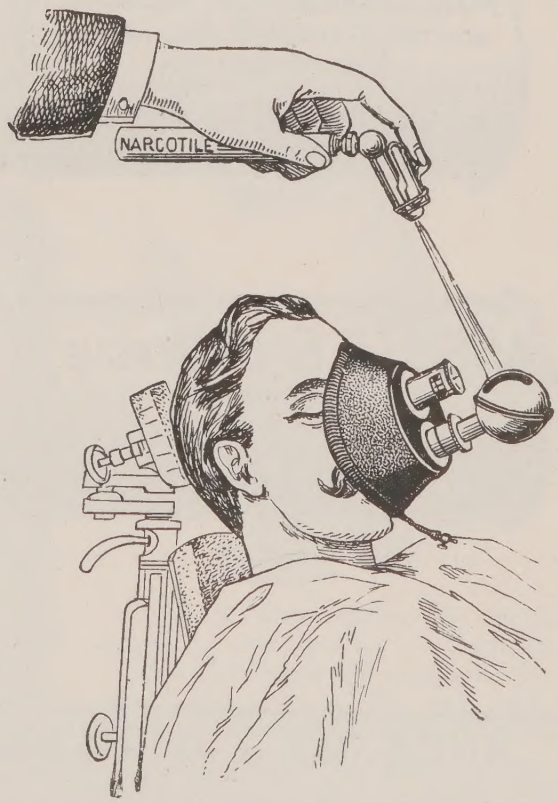
The recent experiments of Drs. WIESNER and POLLOSSON in the use of Chloride of Ethyl as a General Anæsthetic having been more or less successful, we have endeavoured to prepare an agent answering the requirements of Dentists and Surgeons for extraction of teeth and minor operations generally.



We have given the name of "NARCOTILE" to this preparation.

During the last few years it has been extensively used for producing general Anæsthesia in the several Hospitals in Paris, in the Paris School of Dentistry, in Great Britain, the United States, and other countries, with the most satisfactory results.

It is greatly appreciated by Anæsthetists on account of its portability, unalterable composition, rapidity of action, harmless and easy employment.



PRICES, WITH DIRECTIONS FOR USE:

	s.	*d.*
Facepiece and Anæsthetic Cup complete, in cardboard box	25	6
Narcotile Tube with Patent Valve Stopper, straight or curved neck	3	9
Refilling same	3	0
Anæsthetic Cup only, for fitting to existing Facepieces .	5	0

BENGUÉ'S ANESTILE.

For Local Anæsthesia in minor Surgical Operations and Dental Extractions. Also most useful for Cooling Impression Composition.

Dr. Bengué's Anestile is a mixture of Pure Chloride of Ethyl and Chloride of Methyl in definite proportions which volatilises at 0° Centigrade (32° Fahr.). It acts much more quickly than Ethyl Chloride alone, penetrates the tissues more deeply, produces a deeper and longer local anæsthesia, and is therefore particularly suitable for minor surgical operations in parts which are situated at a certain depth below the surface of the skin.

Fig. 1.

Fig. 2.

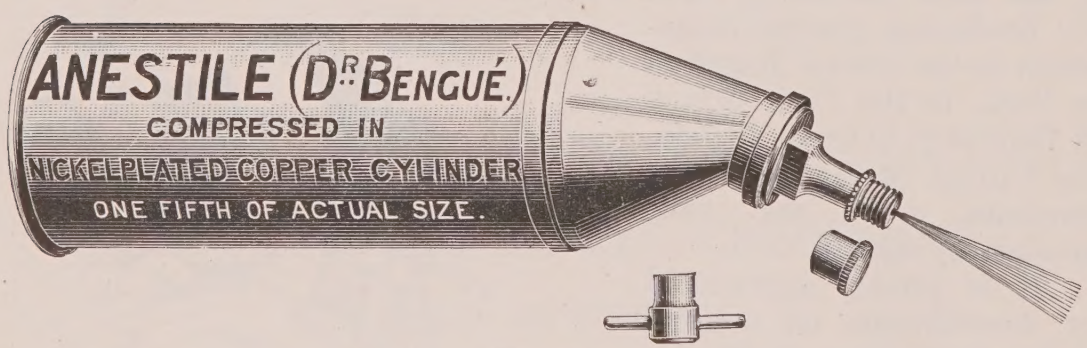
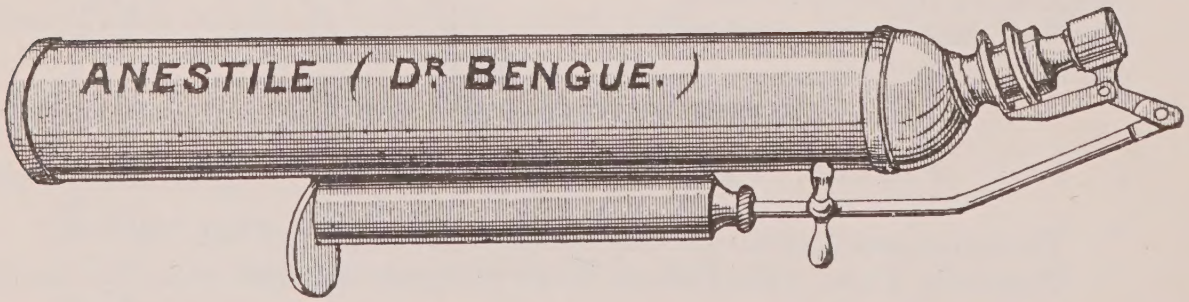


Fig. 3.



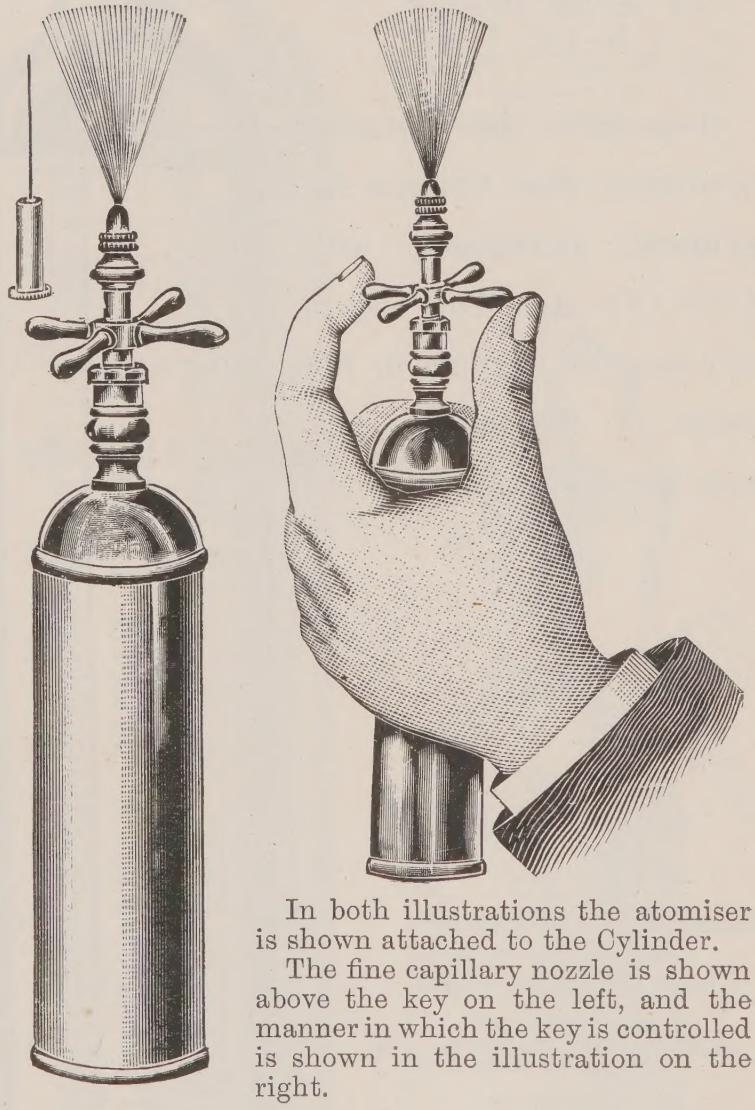
On account of its high degree of volatility and the high tension of its vapour, the storage of Anestile necessitates strong containers with perfect-fitting stoppers.

BENGUÉ'S ANESTILE—*continued.*

Being aware of the inconvenience sometimes experienced by the operator when using Chloride of Ethyl or Anestile for local anæsthesia, owing to the blockage of the outlet, we have devised a special nozzle which prevents stoppage.

Fig. 4 Cylinder is provided with two nozzles—a fine capillary nozzle for producing local anæsthesia for operations over a small surface and for the extraction of teeth, and an atomiser for producing local anæsthesia for operations over a large area and for cooling impressions in the mouth. Instant refrigeration is produced with a very small quantity.

FIG. 4 (PATENTED).



In both illustrations the atomiser is shown attached to the Cylinder.

The fine capillary nozzle is shown above the key on the left, and the manner in which the key is controlled is shown in the illustration on the right.

Directions for using Fig. 4 :

Screw on the Cylinder either the jet or the atomiser, as may be required, take the Cylinder in the right hand, hold the Key Regulator between the thumb and index finger of the left hand, turn the Key from right to left to open the tap and adjust it to obtain the necessary size of spray.

It can then be worked and regulated with one hand with the greatest ease.

When the operation is finished give an extra turn to the Key Regulator, in order to ensure perfect closure of the tap.

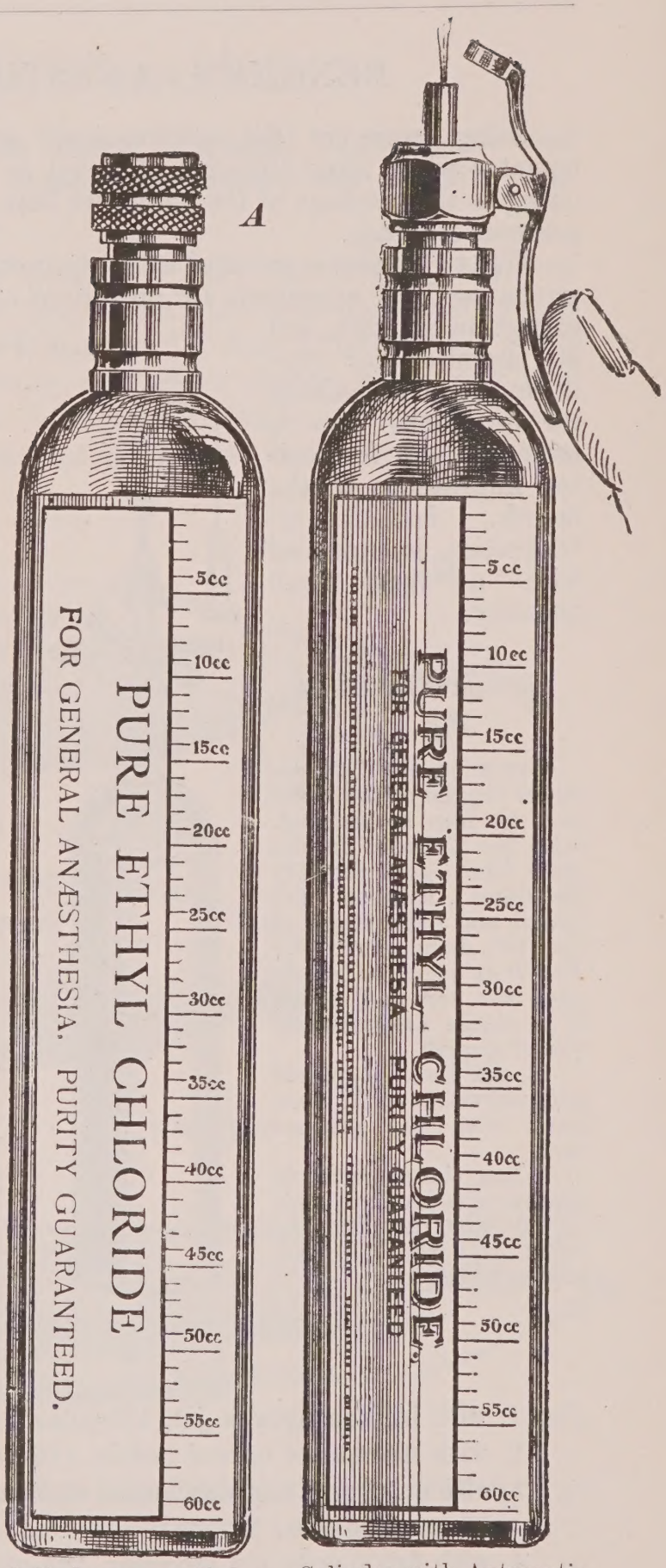
	Full.		Refilling.	
	s.	*d.*	*s.*	*d.*
Fig. 1, with interchangeable jet, 125-gramme size . .	10	0	6	0
,, 2, with straight or curved nozzle, 125-gramme size.	10	0	6	0
,, 3, with automatic cap attachment and curved nozzle, 75-gramme size	10	6	4	2
,, 4, with fine nozzle and atomiser, 125-gramme size .	15	0	6	0

KÜHN'S PURE ETHYL CHLORIDE.

60-gramme size Patented Graduated Glass Cylinder for **general** anæsthesia, with Screw Cap ***A***. This Cap is only intended for use in the transit of the tube to and from the Dentist.

---

	s.	d.
Patented Graduated Glass Cylinder containing 60 grammes	3	3
Refilling same . .	2	9
Automatic Stopper .	1	3



Cylinder as supplied.

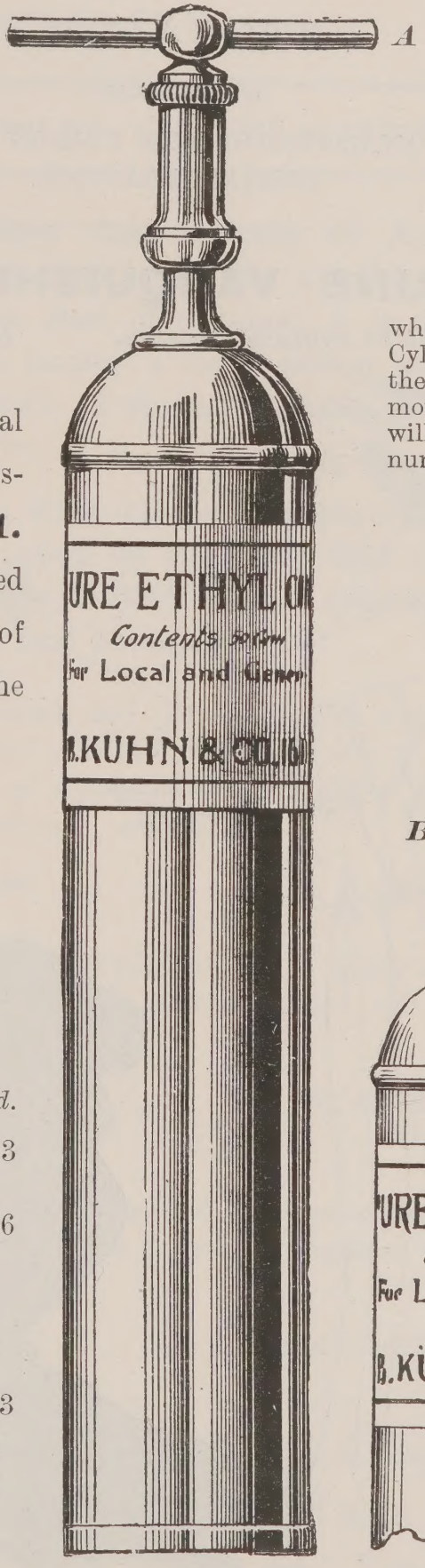
Cylinder with Automatic Stopper attached.

KÜHN'S PURE ETHYL CHLORIDE.

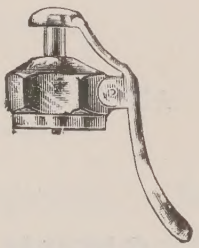
50-gramme size Metal Cylinder for **local** anæsthesia, with Screw Cap ***A***. This Cap is only intended for use in the transit of the tube to and from the Dentist.

---

	s.	*d.*
Metal Cylinder containing 50 grammes	3	3
Refilling same . .	2	6
Automatic Stopper for fitting to Cylinder . . .	1	3



Cylinder as supplied.



Automatic Stopper which is screwed on to Cylinder at ***B*** when the T Cap ***A*** is removed. This Stopper will serve for any number of Cylinders.

Cylinder with Automatic Stopper attached.

STOVAINE.

(REGISTERED.)

AN IDEAL ANÆSTHETIC FOR USE IN SURGICAL AND DENTAL PRACTICE.

STOVAINE VANQUISHES PAIN.

Guaranteed not to contain Cocaine. ***Do not fail to try it.***

TO BE OBTAINED OF ALL DENTAL DEALERS.

STOVAINE—*continued.*

PAMPHLET ON APPLICATION.

STOVAINE is pure Chlorhydrate of Amyleine. It is administered hypodermically like cocaine; its anæsthetic action is equal to that of cocaine; it is much less toxic than cocaine; it exerts a tonic action on the heart; in a word, it possesses all the advantages of cocaine without any of its dangers.

STOVAINE has a wide range of application, and is being very extensively used by surgeons and dentists all over Europe and in the United States and Canada with the greatest success and satisfaction.

1.—The most convenient and popular form in which Stovaine is put up is a 1 per cent. Solution in *Oil of Eucalyptus, Oil of Wintergreen, Boric Acid, Glycerine, Tincture of Rosemary, Thymol, Oil of Peppermint, Benzoic Acid, Carbolic Acid* ·05 *per cent., and Alcohol.*

		s.	*d.*
Price, in 2-oz. bottles	**per bottle**	**4**	**0**

2.—STOVAINE is also supplied in 2-c.c. glass tubes containing a 1 per cent. Solution in distilled water, as used and recommended by Dr. Sauvez, of Paris.

		s.	*d.*
Price	**per box of 12 tubes**	**3**	**3**
„	**„ 50 „**	**11**	**6**

3.—And in Fine Powder in corked glass tubes, each tube containing sufficient to make one ounce of a 1 per cent. Solution with boiling water, as required.

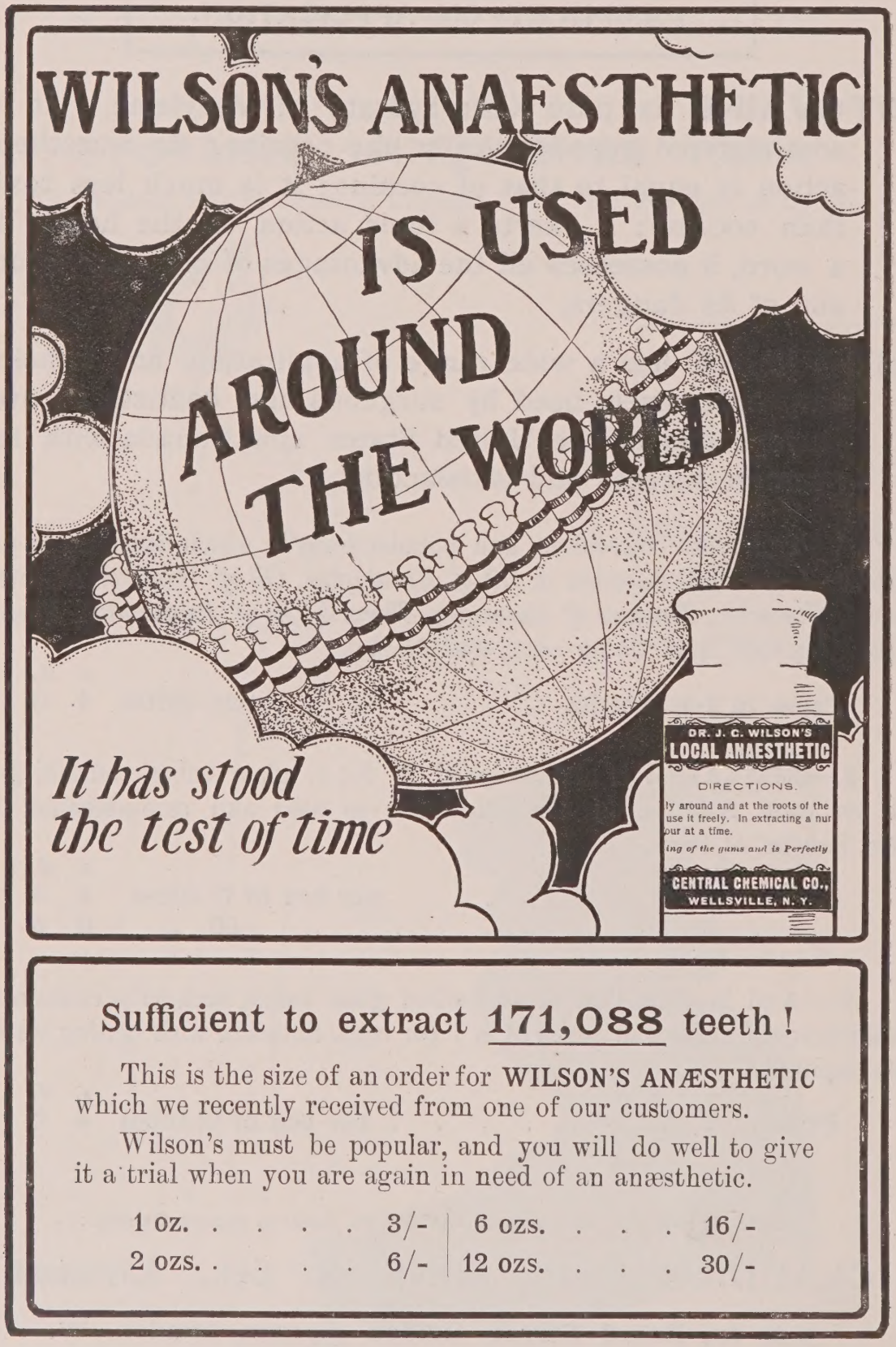
		s.	*d.*
Price	**per box of 12 tubes**	**4**	**0**

Sole Agents for all parts of the British Empire, except Canada:

CLAUDIUS ASH, SONS & CO., Limited,

5 to 12, Broad Street, Golden Square, London, W.

WILSON'S LOCAL ANÆSTHETIC.



Sufficient to extract 171,088 teeth!

This is the size of an order for **WILSON'S ANÆSTHETIC** which we recently received from one of our customers.

Wilson's must be popular, and you will do well to give it a trial when you are again in need of an anæsthetic.

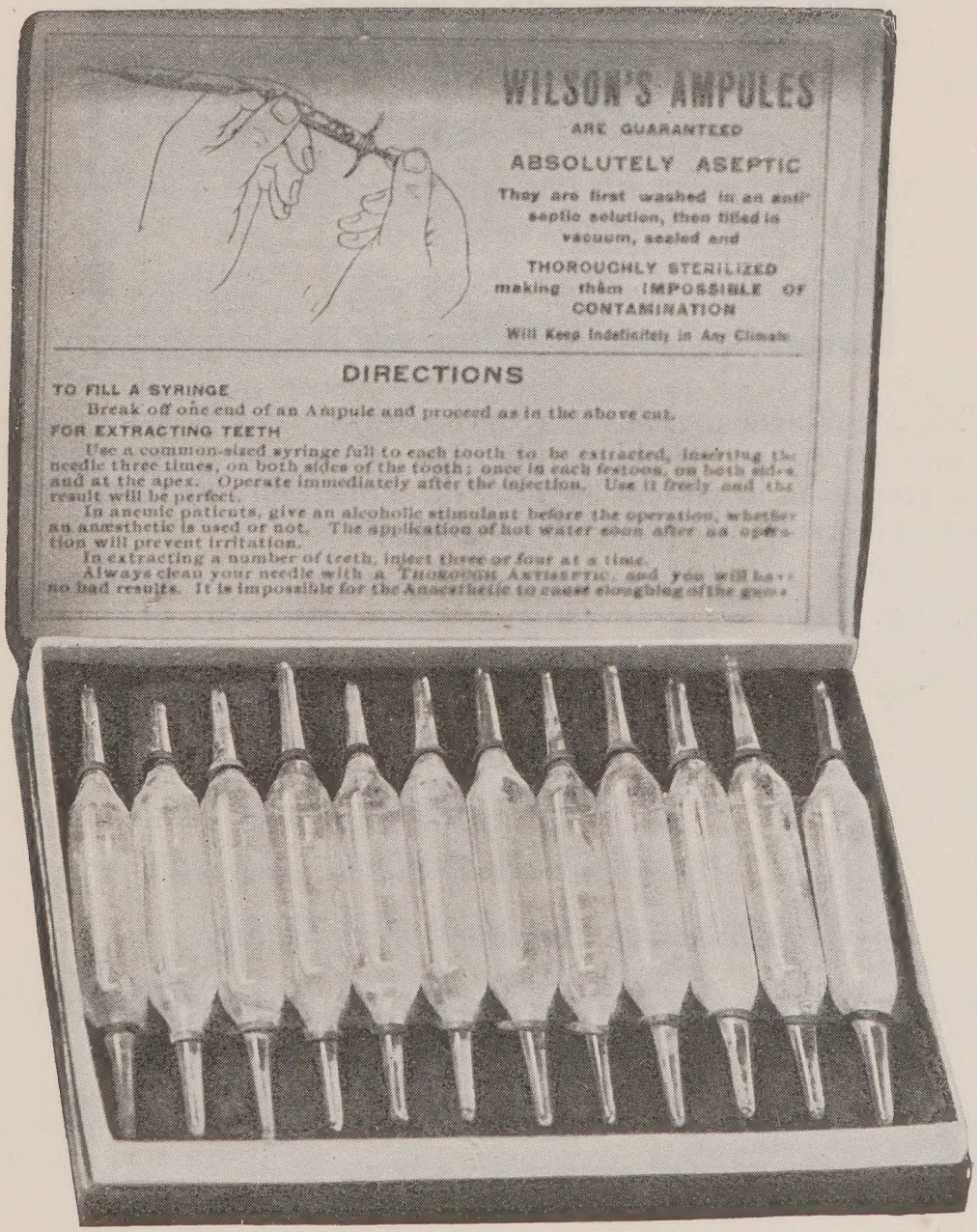
1 oz.	3/-	6 ozs.	16/-
2 ozs.	6/-	12 ozs.	30/-

WILSON'S LOCAL ANÆSTHETIC

IN HERMETICALLY SEALED AMPOULES.

Filled in a Vacuum. Twice Sterilised.
Impossible of Contamination.

A preparation of undoubted merit, in a most convenient package. A syringe full in each ampoule. Always ready for use by simply breaking off the point. Nothing could be cleaner, nothing could be more convenient.

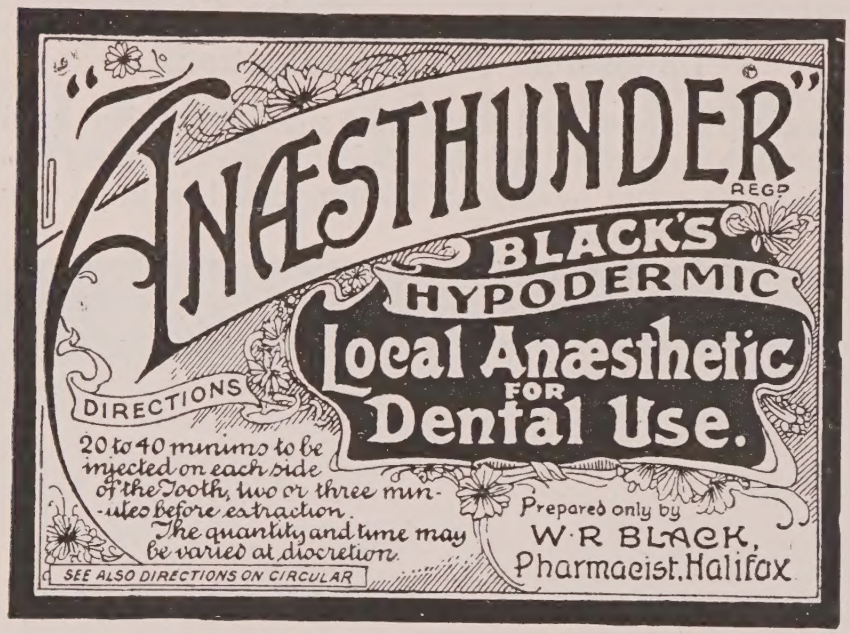

WILSON'S AMPULES
ARE GUARANTEED
ABSOLUTELY ASEPTIC
They are first washed in an antiseptic solution, then filled in vacuum, sealed and
THOROUGHLY STERILIZED
making them IMPOSSIBLE OF CONTAMINATION
Will Keep Indefinitely in Any Climate
DIRECTIONS
TO FILL A SYRINGE
Break off one end of an Ampule and proceed as in the above cut.
FOR EXTRACTING TEETH
Use a common-sized syringe full to each tooth to be extracted, inserting the needle three times, on both sides of the tooth: once in each festoon, on both sides and at the apex. Operate immediately after the injection. Use it freely and the result will be perfect.
In anemic patients, give an alcoholic stimulant before the operation, whether an anæsthetic is used or not. The application of hot water soon after an operation will prevent irritation.
In extracting a number of teeth, inject three or four at a time.
Always clean your needle with a THOROUGH ANTISEPTIC, and you will have no bad results. It is impossible for the Anæsthetic to cause sloughing of the gums.

Try the Old Formula in the New Dress.

	s.	*d.*
Price, per box of 12 Ampoules	3	0

ANÆSTHUNDER.

(Mr. W. R. BLACK'S.)



This Anæsthetic contains 1·23 per cent. of Beta-Eucaine, combined with Suprarenin and suitable antiseptics. Every ounce is manufactured by the proprietor in person, so that the Profession can rely upon the absolute uniformity and purity of the preparation.

	s.	*d.*		£	*s.*	*d.*
1-oz. bottle . .	1	6	. . . per dozen	0	16	6
2-oz. „ . .	3	0	. . . „	1	11	6
6-oz. „ . .	8	0	. . . „	4	10	0

NOPAÏNE.

(Mr. W. R. BLACK'S.)

Efficiency combined with Safety.

Produces a Perfectly Localised Anæsthesia immediately after Injection.

Nopaïne contains less than 1% Cocaine, Hydrochlor., Suprarenin, Wintergreen, and suitable Antiseptics. It is sterilised; and its purity and reliability are guaranteed by the manufacturer.

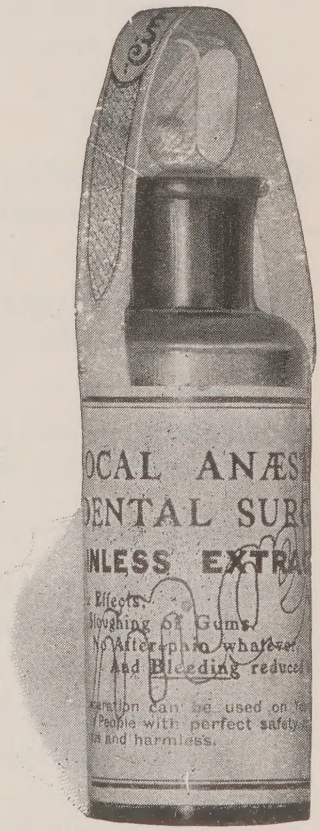
	s.	*d.*		*s.*	*d.*
Price, per 1-oz. bottle,	1	6 ;	per dozen,	16	6
„ 2-oz. „	3	0 ;	„	31	6

"Cimæbu"

A LOCAL ANÆSTHETIC.

Simple in Composition, Safe in Application, Efficient in Results; No Toxic Effects, No Sloughing of the Gums, No After-Pain whatever, and Bleeding reduced to a Minimum.

CIMÆBU is composed of Cocaine, Indigo, Menthol, Euthymol, Adrenalin, Eucalyptus, and Boric Acid. The proportion of Cocaine is very small—**less than three-quarters per cent.**—consequently **Cimæbu** is free from danger.



It has been used with success and satisfaction for more than four years, and can therefore be recommended with every confidence as a **reliable and safe local anæsthetic.**

It is becoming more extensively used every month by Dentists all over the world.

NOTE.

Keep the Bottle in case, away from the light, and well stoppered.

When injecting, press the needle well in, then withdraw the needle a little before forcing home the plunger, in other words, before commencing the injection.

Supplied in one-ounce bottles, with directions for use.

		s.	*d.*
PRICE	per bottle	3	0
,, ...	per doz.	27	6

LOCAL ANÆSTHETICS

FOR HYPODERMIC INJECTION.

		s.	*d.*
Adralgin, in boxes of 12 Ampoules	per box	2	0
Alvatunder—fluid—in bottles	1-oz. bot.	3	6
,, ,, ,, ...	2 ozs.	6	6
,, ,, ,, ...	6 ozs.	18	0
,, 12 ozs., including Hypodermic Syringe		35	0
Anæstiform, in boxes of 12 Ampoules	per box	5	6
Baldock's Cocaine Solution	per bot.	4	0
,, ,, ,, with addition of Adrenine	,,	5	0
,, Beta-Eucaine Solution	,,	4	0
,, ,, ,, ,, with addition of Adrenine	,,	5	0
Cocaine and Adrenalin (Parke, Davis & Co.'s):			
In tubes containing 25 tablets	per tube	2	0
Cocaine—powder—Pure Soluble Hydrochlorate, specially prepared for dental purposes (Reynolds & Branson's):			
In glass tubes containing 1 grain	per doz. tubes	2	0
,, ,, ,, $\frac{1}{2}$,, ...	,, ,,	1	6
In bottles ,, 15 grains	per bot.	1	9
Cocaine Pellets (Wyley's), $\frac{1}{2}$-grain size:			
In tubes containing 12 pellets	per tube	0	9
,, ,, ,, ,, ...	per $\frac{1}{2}$ doz. tubes	4	0
Cocaine Hydrochlorate (Burroughs, Wellcome and Co.'s):			
In glass tubes containing 12 tabloids $\frac{1}{4}$-grain size .	per tube	0	7
,, ,, ,, ,, ,, ,,	per doz. tubes	6	0
Codrenine—fluid—in 1-oz. bottles.	per bot.	2	6
In boxes of 1 dozen $\frac{1}{2}$-c.c. Ampoules	per box	2	6
Eucaine-Beta—powder—in 1-gramme bottles . .	per bot.	0	8
Eucaine Hydrochlorate (Burroughs, Wellcome & Co.'s):			
In glass tubes containing 12 tabloids $\frac{1}{3}$-grain size .	per tube	0	7
,, ,, ,, ,, ,, ,,	per doz. tubes	6	0
Eucaine Hydrochloride (Oppenheimer's)—Soluble Hypodermics:			
In glass tubes containing 20 tablets, $\frac{1}{3}$, $\frac{1}{4}$ or $\frac{1}{2}$-grain size	per tube	1	6
Eudrenine—fluid—in 1-oz. bottles	per bot.	2	6
,, ,, in boxes of 1 dozen $\frac{1}{2}$-c.c. Ampoules	per box	2	6
Hobbs' Local Anæsthetic—fluid—in bottles . .	per oz.	2	6
,, ,, ,, ,, ,, . .	per 3 ozs.	7	0
,, ,, ,, ,, ,, . .	,, 6 ,,	12	0
,, ,, ,, ,, ,, . .	,, 12 ,,	21	0

LOCAL ANÆSTHETICS

FOR HYPODERMIC INJECTION—*continued.*

		s.	d.
Neurocaine—Discoids—in glass tubes	per tube	4	0
„ in tablets, „ „ of 25	„	1	6
Novocain—fluid—in Ampoules, 10 Ampoules in box . . .		3	4
„ „ in 1-oz. bottles.	per bot.	2	6
„ „ „ 2-oz. „	„	4	6
Oaten's Local Anæsthetic—fluid—in bottles . .	per oz.	3	0
„ „ „ „ „ . .	per 2 ozs.	5	6
„ „ „ „ „ . .	„ 3 „	7	6
„ „ „ „ „ . .	„ 6 „	14	0
„ „ „ „ „ . .	„ 10 „	20	0
Waite's Local Anæsthetic—fluid—in bottles . .	per oz.	4	0
„ „ „ „ „ . .	per 6 ozs.	20	0
„ „ „ „ „ . .	„ 20 „	60	0
Winthrop's Local Anæsthetic—fluid—in bottles .	per oz.	2	6
„ „ „ „ „ .	per 6 ozs.	13	0
„ „ „ „ „ .	„ 20 „	21	0

LOCAL ANÆSTHETICS

FOR OUTWARD APPLICATION TO THE GUMS.

With directions for use.

		s.	d.
Barr's Local Anæsthetic—fluid	per bot.	3	2
Creager's Anæsthetic Pencil:			
One Holder and four Medicated Points		10	0
„ „ „ one „ Point		4	0
Holder only		2	0
Medicated Points	each	2	0
Davis's Eucathymen—fluid	small bot.	2	6
„ „ „	medium „	5	0
„ „ „	large „	11	0
„ „ „	extra „ „	21	0
Scott's Calorific Fluid	large „	4	6
„ „ „	small „	2	6
Snape's „ „	large „	5	6
„ „ „	small „	3	6

SIMPLE ASEPTIC HYPODERMIC SYRINGES,

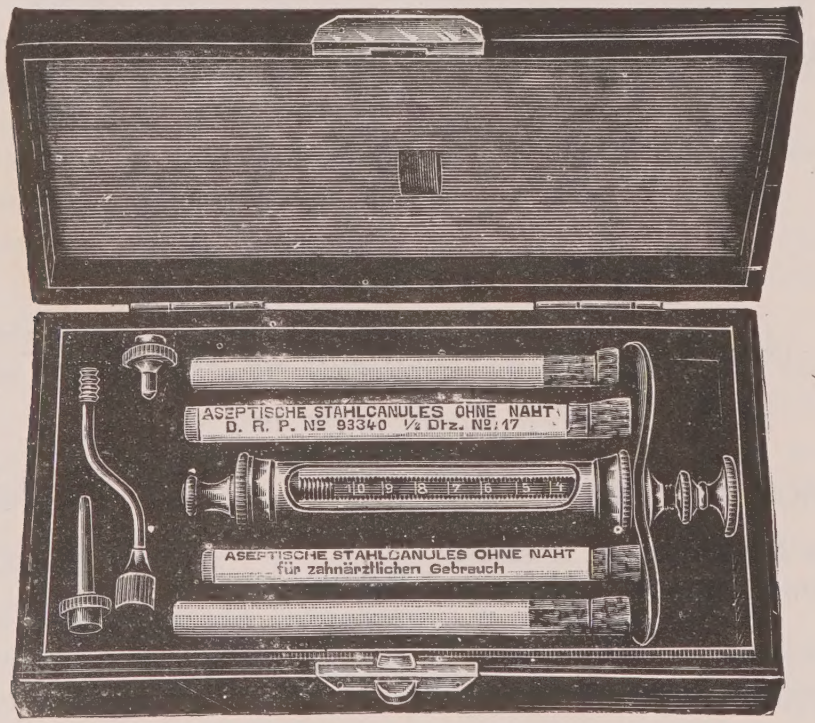
WITH GLASS BARREL AND LEATHER PACKING.

The Simple Aseptic Syringes, like the **All-Metal** shown on the next page, can be kept in thoroughly good working order by occasionally lubricating the plunger with a few drops of lysol, oil of cloves, or other suitable essential oil.

They are all furnished with patented seamless detachable needles.

Each 20-minim Syringe is furnished with nozzles ***B*** and ***F*** (see next page), twelve dental needles, and two glass vials for hypodermic tablets.

Each 40-minim Syringe is furnished with nozzles ***B*** and ***F***, connections ***D*** and ***E*** (see next page), and two glass vials for hypodermic tablets.

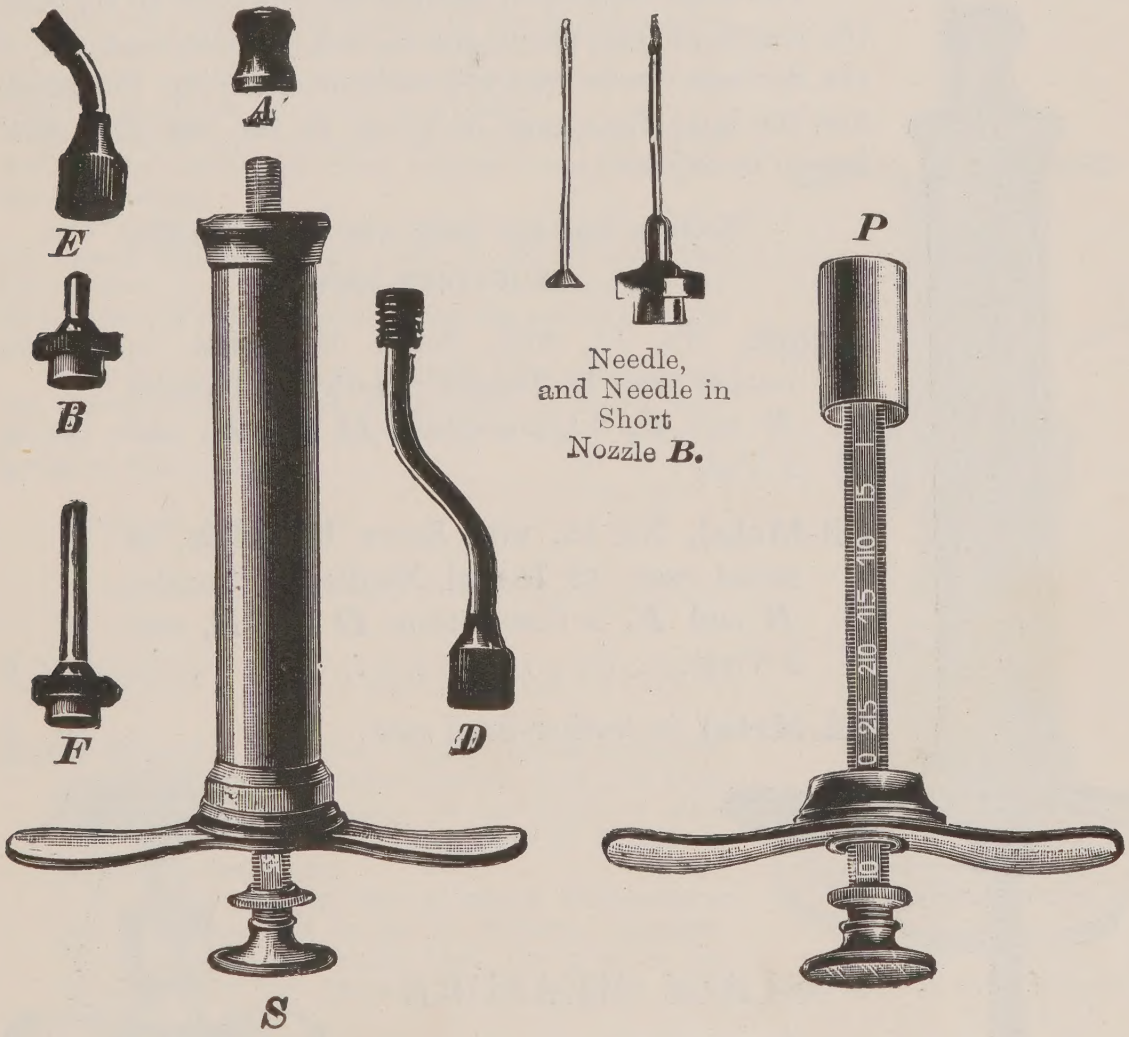

ASEPTISCHE STAHLCANULES OHNE NAHT
D. R. P. Nº 93340 ¼ Dtz. Nº 17
ASEPTISCHE STAHLCANULES OHNE NAHT
für zahnärztlichen Gebrauch

This illustration shows the 40-minim Simple Aseptic Hypodermic Syringe in case, with nozzles ***B*** and ***F***, connection ***D***, two tubes dental needles, and two glass vials for hypodermic tablets.

		s.	*d.*
Simple, No. 6.—20-minim capacity, in leather-lined case . .		7	6
No. 11.—40 „ „ „ „ . .		9	6
Extra Needles for either of above Syringes . .	per tube of 6	1	0

ALL-METAL ASEPTIC HYPODERMIC SYRINGES.

Made of metal throughout—metal barrel and metal plunger; can be boiled in any antiseptic like any other metal instrument, and thus kept in a perfectly aseptic condition.



S—Syringe with Threaded Mount.
A—Screw Cap.
B—Short Nozzle.
F—Long Nozzle.
D—Bayonet Connection.
E—Curved Connection.
P—All-Metal Plunger.

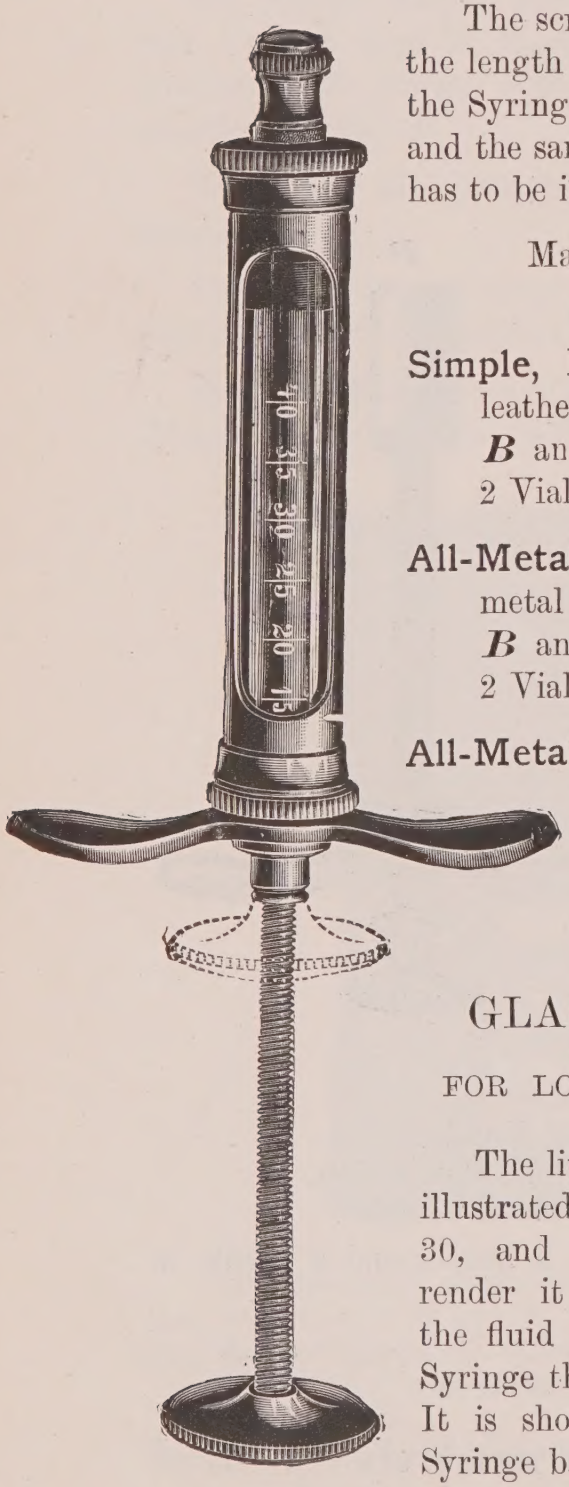
The illustrations between ***D*** and ***P*** show a needle, and a needle in Short Nozzle ***B***.

	s.	*d.*
All-Metal, No. 15.—20-minim capacity, in metal case .	8	6
„ No. 13.—40 „ „ „ .	10	6
Extra Needles for either of above Syringes per tube of 6	1	0

These Syringes can be had, to order, in leather cases, at the same prices as in metal cases.

ASEPTIC HYPODERMIC SYRINGES,

WITH SCREW EXTENSION PISTON ROD.



The screw extension enables the Operator to regulate the length of the piston rod so that all the contents of the Syringe can be injected without cramping the hand, and the same force can be given to the last drop that has to be injected.

Made in one size only, viz.: 40-minim—
see previous pages.

Simple, No. 11, with Screw Extension, in leather case, 12 Dental Needles, 2 Nozzles ***B*** and ***F,*** 2 Connections ***D*** and ***E,*** and 2 Vials . . . . . *s.* 9 *d.* 6

All-Metal, No. 13, with Screw Extension, in metal case, 12 Dental Needles, 2 Nozzles ***B*** and ***F,*** 2 Connections ***D*** and ***E,*** and 2 Vials 10 6

All-Metal, in leather-lined case. 10 6

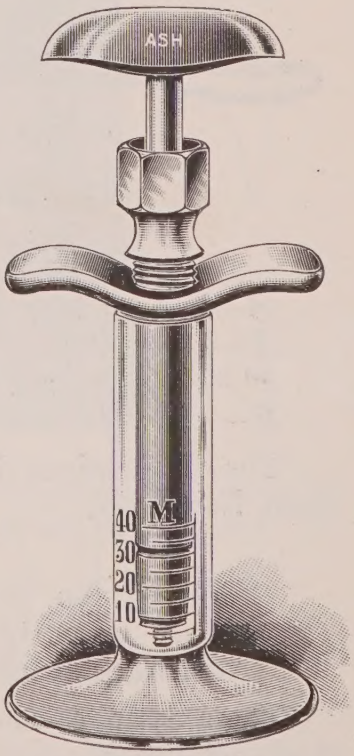
GLASS MEASURE

FOR LOCAL ANÆSTHETICS.

The little Glass Measure here illustrated is marked for 10, 20, 30, and 40 minims, and to render it possible to draw all the fluid into the barrel of the Syringe the bottom is **V**-shaped. It is shown with an Imperial Syringe barrel in it.

s. *d.*

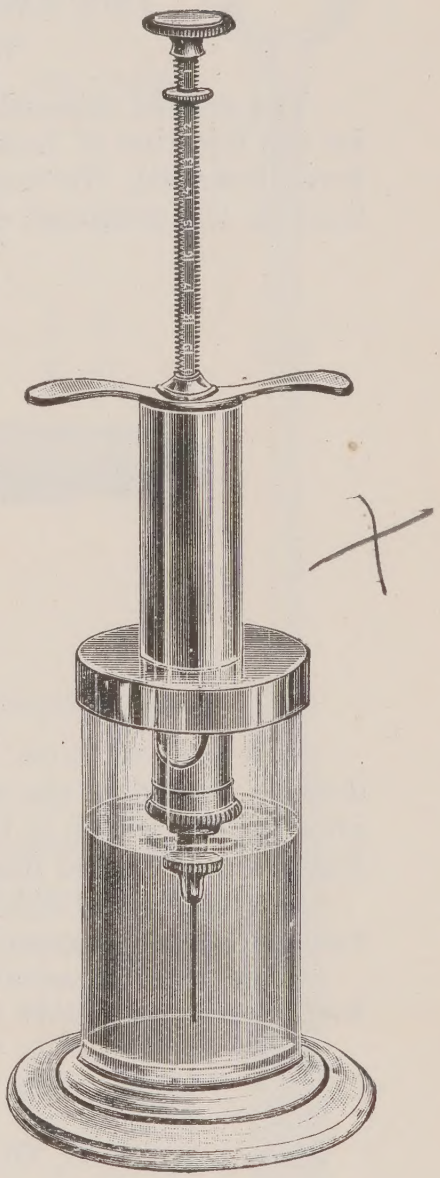
PRICE, without Syringe. 1 0



About half natural size.

BARDET'S STERILISER

FOR HYPODERMIC SYRINGES.



The employment of this little Steriliser ensures the Operator having a perfectly sterilised syringe in perfect working order always at hand. The leather packing, being constantly bathed by the liquid, cannot shrink, consequently the inconvenience of having an instrument which at the moment of use allows the liquid to escape at the joints is avoided.

The syringe may permanently remain in the liquid without the metal parts being injured in any way (see the illustration).

After having placed the syringe in the Steriliser, and raised the piston, in order to fill it with the disinfectant, it is advisable to make certain that the disinfectant is well in contact with the packing on the piston.

When the syringe is to be used, after discharging the disinfectant from it, fill it once or twice with boiling water, in order to clear it of every trace of lysol and phenic acid.

	s.	*d.*
PRICE OF APPARATUS	2	0

ANTISEPTIC PREPARATIONS.

Hay's Kresol is made from highly refined materials. It is practically free from Carbolic Acid and from inert tar oils. It contains no free alkali or resin and does not stain linen or corrode dental or surgical instruments.

It contains 50 per cent of active disinfectants and is guaranteed to be of uniform strength. The manufacturers claim that "it is by far the cheapest and best preparation of its class in the market." It does not rust steel.

	s.	*d.*
PRICE. . . . . per small bottle, 7½*d.*; large bottle	1	0

Lysol is a German speciality obtained by the saponification of Cresols, and containing the higher homologues of Phenol (Martindale). It is more destructive of fungal bacteria and less poisonous than phenol. A useful disinfectant and sterilising agent. It does not rust steel.

	s.	*d.*
In 1-kilo bottles. . . . . per bot.	3	0

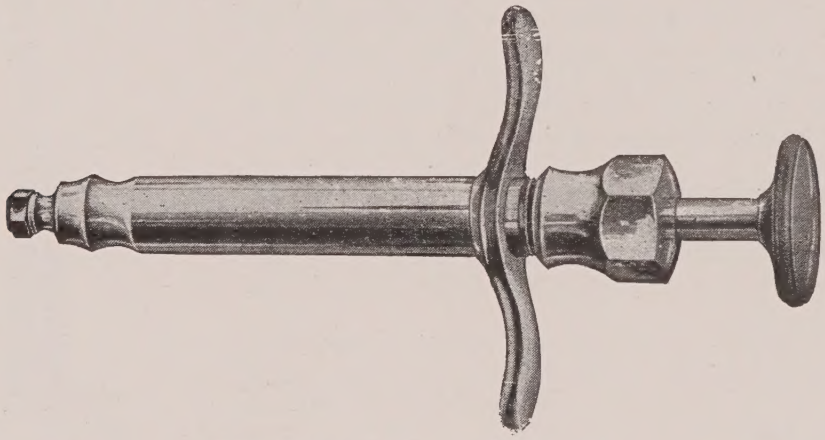
Lysoform is a liquid Formaldehyde, Potash Soap, highly antiseptic, relatively non-poisonous, inodorous, deodorant, and cheap. It has the highest bactericidal action even in 2 to 5 per cent. solution, and is suitable for surgical operations and instrument disinfection. A 2 per cent. solution is sufficient for general purposes, and it is better freshly prepared (Martindale). It does not rust steel.

	s.	*d.*
In bottles containing about 16 ozs. . . . . per bot.	2	6

IMPERIAL DENTAL SYRINGE,

WITH GRADUATED PISTON.

The general demand which there is for a powerful, unbreakable Syringe for the injection of Local Anæsthetics, etc., is met by the Imperial Syringe, here illustrated. Its capacity, 30 minims, is large enough to hold sufficient fluid for the treatment of several teeth at one sitting.



IMPERIAL DENTAL SYRINGE.

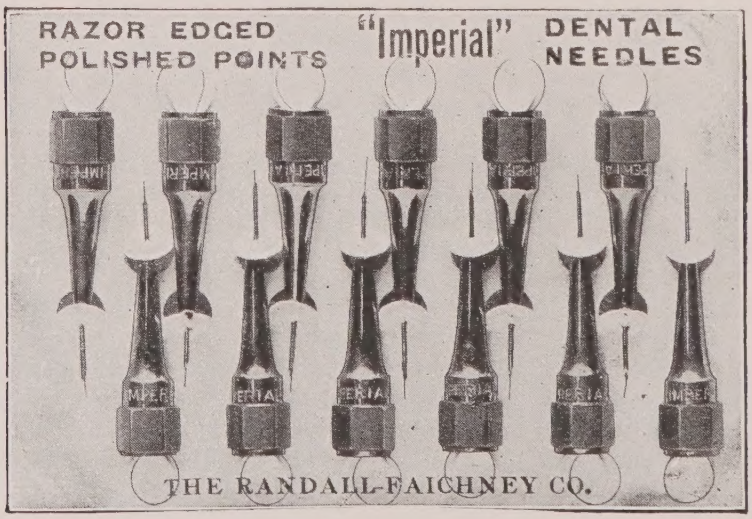
It is made of extra thick metal, fitted with hexagon cap, with special durable packing ; the extending piston rod is small to give compound pressure, the button at the end of it is large and strong, and in conjunction with the well-shaped finger bars gives a feeling of comfort to the Operator.

A Wrench for tightening the packing in the hexagon cap and preventing leakage is supplied with each Syringe.

With the Imperial Dental Syringe there is no waste of the Anæsthetic, no waste of time, and no waste of money on repairs.

STEEL NEEDLES

FOR THE IMPERIAL DENTAL SYRINGE.



These are non-leakable, non-breakable, very strong and durable, of the

IMPERIAL SYRINGE—*continued.*

very finest quality and finish, with polished razor-edge points. Every one is tested, and guaranteed.

	s.	*d.*
Syringe with Wrench and one each straight and curved Needles	8	0
Extra Syringe Needles, straight or curved per doz.	6	0
Leather Case to hold Syringe, etc. . . .	3	0

SPONGE HOLDER.

(Mr. J. C. CLARKSON'S.)

With Ebony Handle, Sliding Ring, and Serrated Jaws. Full length, 8 inches.

Mr. Clarkson says: The Sponge should be fixed in the jaws while damp, and twisted lengthwise during insertion, and care should be taken that no part of the Sponge enters the slit in the stem to prevent the sliding ring being pushed up to the jaws.

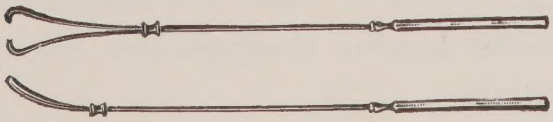
The back of the tongue can be reached with the Holder with ease and perfect safety, and there are no sharp edges about the metal to scratch or tear the tissues.

	s.	*d.*
Price, Nickel-plated	3	6

Clarkson's Sponge Holder.

ASEPTIC SPONGE HOLDERS,

FOR HAND, WITH SLIDING RING.



		s.	*d.*
Straight or Curved, Nickel-plated throughout, as illustrated	each	2	0
Straight, with three Prongs, with Ebony or Nickel-plated Metal handle	„	3	6

K H

BOOKS ON ANÆSTHETICS.

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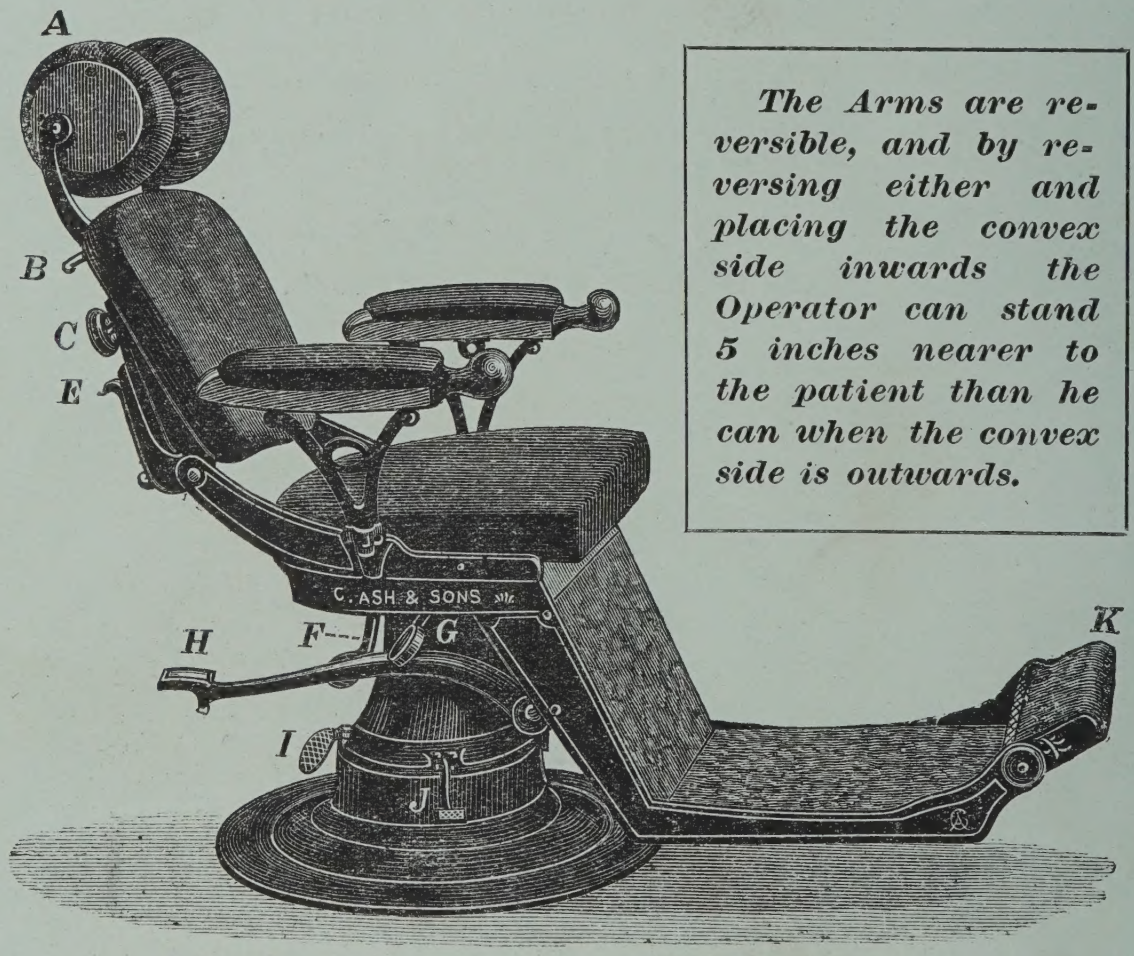

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